

FEBRUARY '58

# MODERN TEXTILES

MAGAZINE

*Specializing in Man-Made Fibers and Blends since 1925*

FIBERS

FABRICS

FINISHES



Cone Mills'  
CEASAR CONE —  
at his shop  
more play and  
less work fabrics —  
Story page 32

## THIS MONTH'S SPECIAL FEATURES

420 nylon in your mill

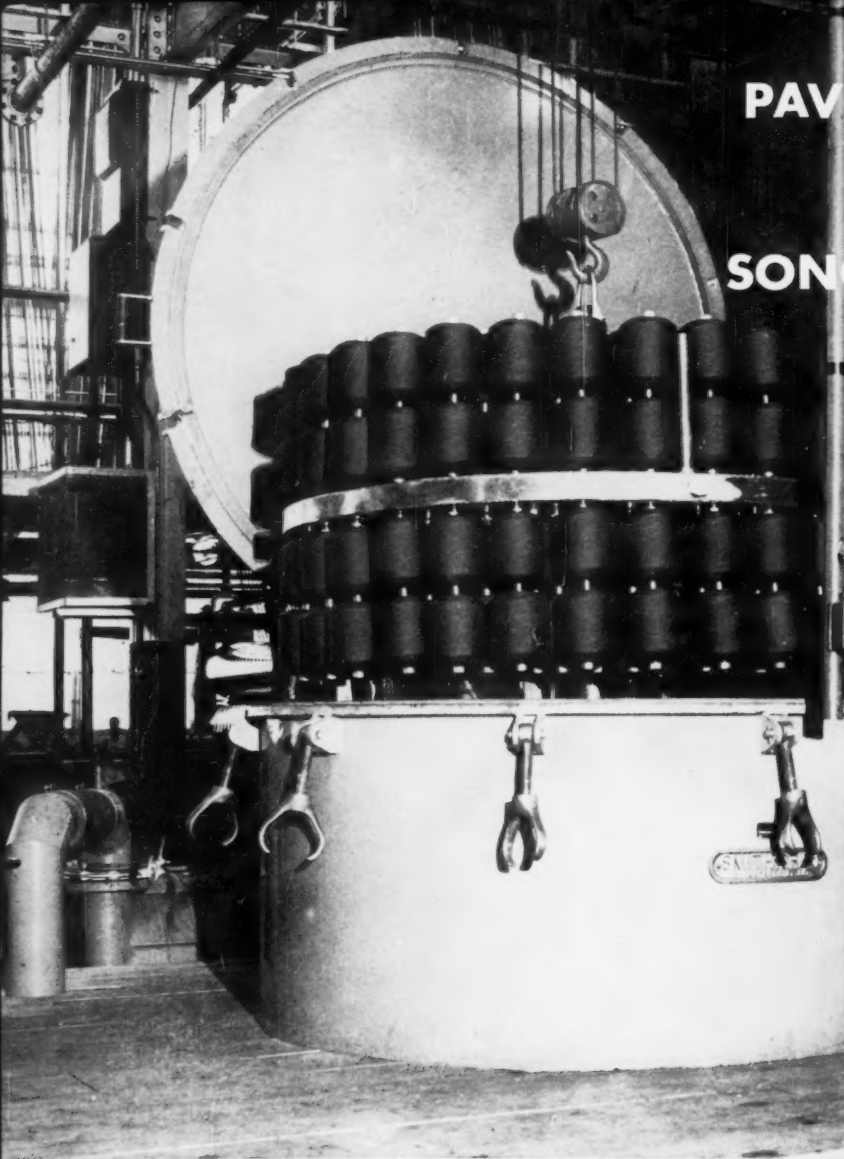
Cross-dyeing Arnel mixtures

Future of stretch & bulk yarns

1957 textile research summary

Tests for woolen system yarns

AND 13 MORE USEFUL ARTICLES AND TIMELY REPORTS



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PROFITS WITH  
SONOCO-RESEARCHED  
PRODUCTS!**

You might well ask how Sonoco research can possibly increase your profits! It can and does! Take Sonoco Dytex Tubes for example. Here is a product that has been accepted by the industry for all standard forms of package dyeing. When used with the exclusive Plastavon Sleeve, you have the perfect combination for better and cleaner dyeing.

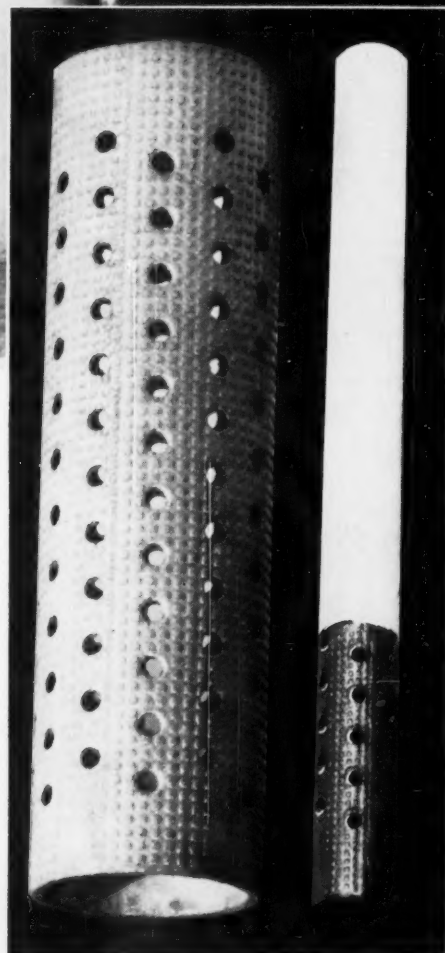
SONOCO is the one company in its field that, for nearly 60 years, has supplied the industry with research-developed paper carriers. For you, Sonoco products mean better performance, greater economy and more profit . . . and exhaustive Sonoco research has proved it!

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## Products for Textiles

**SONOCO PRODUCTS COMPANY**



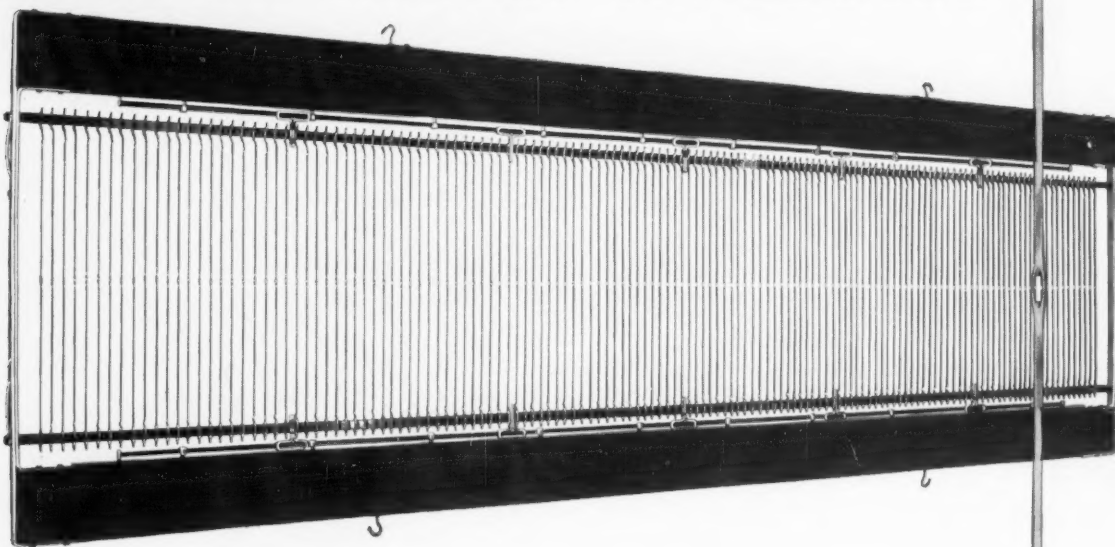
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## NEEDS

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## **HARNESS FRAMES & HEDDLES**



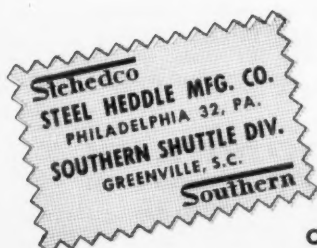
### **Stehedco Harness Frames and Heddles Guarantee You The Quality You Need**

Stehedco heddles are expertly made of finest quality spring steel, highly polished to gently handle your most delicate yarns, and designed to give you longer, trouble-free production than ordinary heddles.

Stehedco harness frames are carefully made of selected lumber, straight and knot-free, to meet the most exacting standards. Braces and hardware are designed to give smooth, consistently fine performance. Tempered steel rods give added life and more efficient operation.

Steel Heddle Sales Engineers, experts of the textile industry, are constantly alert to the needs of the textile mills, and Stehedco products are first with the latest improvements—after being field tested in large scale operations.

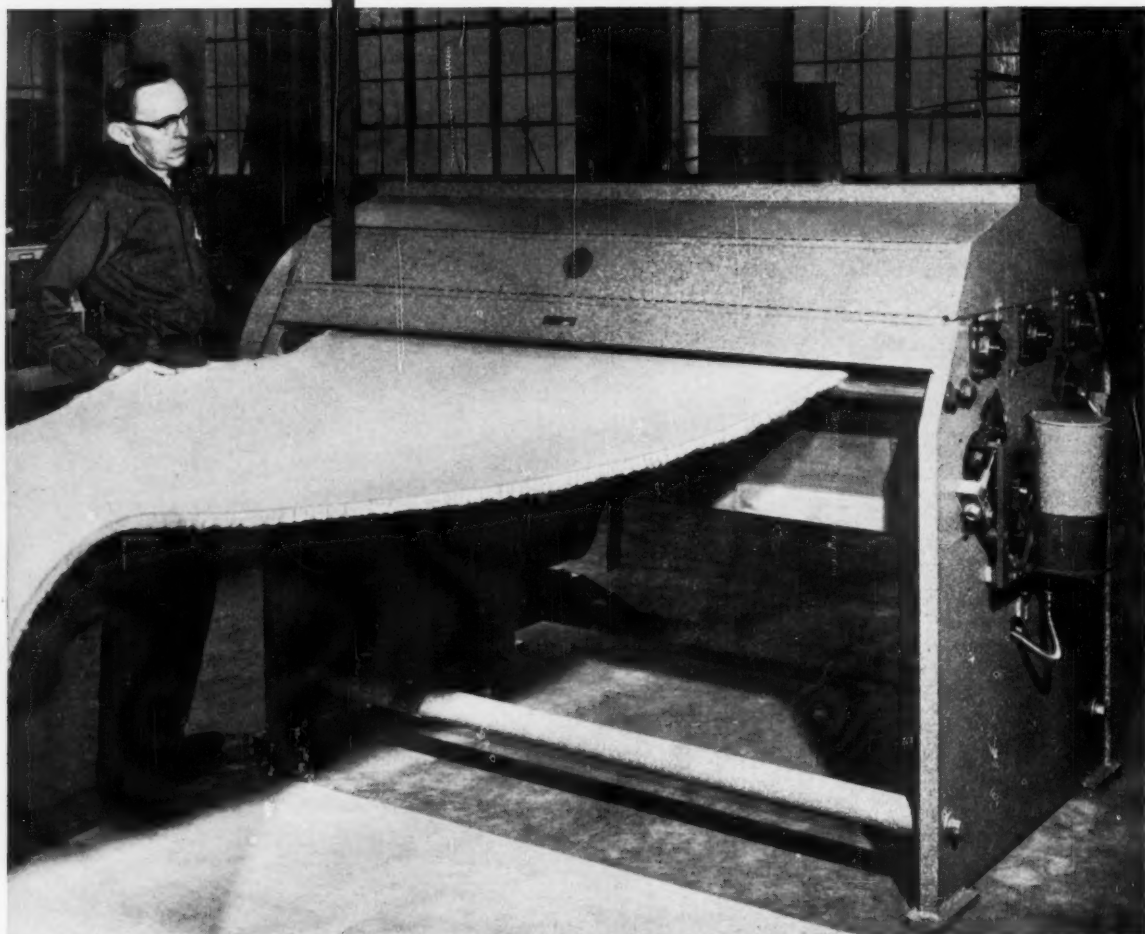
**YOU CAN DEPEND ON QUALITY WITH STEHEDCO PRODUCTS**



F-5702

**Other Plants and Offices: Granby, Quebec, Canada • Lawrence, Mass. • Greensboro, N.C.  
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LANSDALE, PA.

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SOUTHERN SALES REPRESENTATIVE: Parrott and Ballentine, Greenville, S.C.



# MODERN TEXTILES

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## The Principal Trade Groups

Man-Made Fiber Producers  
Association ..... Empire State Bldg., New York  
National Federation of Textiles,  
Inc. .... 389 Fifth Ave., New York  
American Association of Textile Chemists and  
Colorists ..... Lowell Techn. Inst., Lowell, Mass.  
American Association for Textile  
Technology, Inc. .... 100 W. 55th St., New York  
Silk and Rayon Printers and Dyers Ass'n  
of America, Inc. .... 1450 Broadway, New York  
Synthetic Organic Chemical Manufacturers  
Association ..... 41 F. 42nd St., New York  
Textile Distributors Institute,  
Inc. .... 469 Seventh Ave., New York  
American Rayon Institute  
350 Fifth Avenue, New York

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## Support of L-22 Urged

When retail piece goods fail to perform satisfactorily, "more than money is lost," according to Albert E. Johnson, director of trade relations for the National Institute of Drycleaning. He advised buyers of retail piece goods at a clinic held at the recent Dallas Market Show that they make their demands for standards compliance even more insistent "by encouraging your resources to use standards as guides to furnishing you trouble-free fabrics". Johnson urged the buyers to always favor those products that are "specifically offered as having met the requirements of American Standard L-22."

## Permanent Crimp Yarn

American Viscose Corp. has introduced Avicron, a new continuous filament rayon yarn with a permanent crimp, for particular application to tufted products, including carpets and bedspreads. Because its crimp is activated in the normal bleaching and dyeing processes, tufts are locked securely to the base fabrics and each laundering reactivates the crimp. Avicron is being offered to manufacturers in singles as well as two ply 2700 denier yarns at 65 cents a pound.

## Cellulose Acetate Cutback

Hercules Powder Co. is considering ending cellulose acetate production at its Parlin, N. J., plant by 1959 because of the unprofitable nature of such manufacture. Hercules attributed its action to the depressed over-all cellulose acetate textile market. Also, Hercules activities in polyolefins chemistry—two major operations making new plastic products having gone on stream at Parlin recently—require the firm to devote more effort and man-power to these operations, described by a Hercules spokesman as "more promising".

## Arbitration Clause Changes

In view of the pending consolidation of the National Federation of Textiles, Inc., with the American Cotton Manufacturers Institute, Inc., members of the Federation have been notified to promptly include the amended arbitration contract clause in their contracts. The amended clause states that arbitration in New York City shall be settled by "the Rules of the Arbitration Bureau of The National Federation, of Textiles, Inc., or upon dissolution of said Federation, under the Rules of the successor of said Bureau."

## Nylon Tire Cord Gains

Output of synthetic fiber tire cord and tire cord fabric in 1956 amounted to 394,091,000 pounds, 14% under output in 1955, according to the U. S. Department of Commerce. Rayon tire cord and fabric accounted to 332,662,000 pounds of the synthetic total, whereas in 1955 it had accounted for 406,807,000 pounds. Nylon tire cord and fabric output in 1956 was up sharply, however, to 61,429,000 pounds from 49,375,000 pounds in the preceding year. *To obtain a copy of the full text of this report write the editors.*

## Metallic Yarn Prices Now Available

Beginning with January, MODERN TEXTILES MAGAZINE has broadened its regular monthly publication of prices of man-made fibers to include metallic yarns. Several leading producers of these yarns are cooperating with the editors to furnish detailed price lists of their various types of yarns. The lists are being checked monthly to keep them up to date. Prices of all the major man-made fibers have been published in each issue of MODERN TEXTILES MAGAZINE for more than 20 years. No other publication carries such price information.

# The word for rayon **HARTFORD** the symbol of dependability

Count on Hartford for a wide range of the finest rayon fiber staple. Count on Hartford for on-time service... a thoroughly dependable source of supply.

- Solution-dyed heavy denier crimped rayon staple KOLORBON†
- White heavy denier crimped rayon staple . . . VISCALON 66†
- White heavy denier "smooth" rayon staple . . . VISCALON 44
- White fine denier regular rayon staple . . . . . VISCALON 22

†Available in both 3" and 6" lengths

## HARTFORD RAYON COMPANY

136 Madison Avenue, New York City

Southern Sales Office: Atlanta, Georgia

The country's leading producer of solution-dyed rayon staple



# FOSTER WINDING MACHINES

## **Why They Require MINIMUM Maintenance and Repairs**

Foster winding machines have always been noted for their sturdiness, fine craftsmanship and low maintenance and repair costs. For instance the cost of repairs on our Model 102 runs as low as \$10.00 per year per 100 spindles.

This is no accident. It is a result of high standards of quality which are maintained throughout our factory. Every part is carefully inspected before it goes to our Assembly Department. Many parts, which directly affect the quality of the yarn or the winding, are tested for accuracy on instruments which have unvarying standards and are far more critical and precise than any human being.

We illustrate herewith a few examples of the high standards which assure long life and low maintenance for all Foster Winding Machines.

### **PROFILOMETER**

This instrument, installed in our inspection department, measures irregularities in the finish or surface of metals in micro inches (a micro inch is a millionth of an inch). Here it is being used to test the inside surface of a tube which is part of a special attachment for our Model 102.

### **MICRO-PROJECTOR**

This instrument, also installed in our Inspection Department, magnifies an object 62½ times, revealing imperfections which are invisible to the naked eye. In this photograph it is silhouetting the teeth of a slub catcher blade.

### **DYNAMIC BALANCING MACHINE**

This machine (in our Inspection Department) is electronically operated and is used principally to test the balance of the cams which are used in our drum winding machines. An unbalanced cam never gets by this machine and into the assembly line.

## **FOSTER MACHINE COMPANY**

Westfield, Massachusetts, U. S. A.

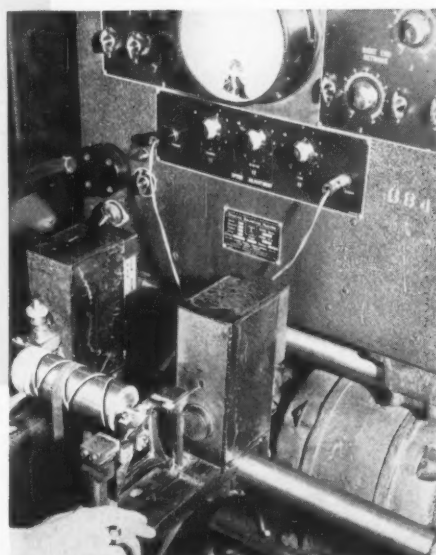
Southern Office: Johnston Bldg., Charlotte, N. C. • Canadian Representative: Ross Whitehead and Company Limited, 1475 Mountain St., Montreal, Quebec and 100 Dixie Plaza, Port Credit, Ont. • European Representative: Muschamp Textile Machinery Limited, Keb Lane Bardsley, Oldham, England



**PROFILOMETER**



**MICRO-PROJECTOR**



**DYNAMIC BALANCING MACHINE**

## Rayon Tells Its Story

A new technique for publicizing rayon was tried last month with the publication of a special 16-page advertising supplement in the New York Sunday Times devoted entirely to this fiber and its function in the American economy.

Paid for by the American Rayon Institute, a promotional office financed by a number of rayon producers, more than 1,400,000 copies of the supplement were distributed throughout the country as part of the Times circulation. An additional 150,000 copies were handed out during January by the Institute to key persons in the chemical, wood pulp and tire cord industries as well as to tire and auto dealers at trade conventions. Other copies were distributed at the Chicago Home Furnishings Market.

A series of articles in the supplement gave information about the contribution of the rayon industry to textile and chemical research; the usefulness of rayon tire cord to the millions of American motorists, and the widely recognized contribution that rayon has made to fashionable and long-wearing apparel. A colorful illustrated map in the center fold showed graphically the importance of rayon in the industrial structure of the United States.

## Hybrid Cotton Research Gains

Eventual large-scale production of hybrid cotton is believed to be closer as the result of recent experiments by Dr. Frank M. Eaton, University of California, in conjunction with the U. S. Department of Agriculture. Dr. Eaton in his work has utilized a new Rohm & Haas Co. chemical—FW450 (sodium alpha, beta-dichloroisobutyrate.) The chemical's biological activity is designated as that of a "selective gametocide," a material which inactivates the male or pollen producing part of the flower of a plant without impairing the normal functioning of the female

part. Heretofore, hybrid cotton seed had been obtained on a small scale by laborious hand emasculatation and hand pollination. For further information write the editors.

## Stretch Hosiery Standards

The National Association of Hosiery Manufacturers has distributed suggested minimum quality standards to be followed in the manufacture of ladies' sheer stretch hosiery. The standards represent the joint efforts of the NAHM and Patentex, Inc., holder of the U. S. and Canadian basic patents for such hosiery and yarns.

More than 100 leading hosiery manufacturers and yarn throwsters in the U. S. and Canada have been licensed by Patentex. Manufacturers who are Patentex licensees have been requested to furnish Patentex with sample pairs of hosiery for examination by Patentex technicians. Some 1,500 hosiery buyers also are being notified of the new quality standards, the first to be adopted for this section of the industry.

## Depreciation Reforms Urged

Robert E. Pomeranz, president of Roberts Co., Sanford, N. C., manufacturer of textile spinning machinery, has urged the Government to take immediate action to ease the pressure of spreading obsolescence upon a depressed textile industry. Pomeranz claimed that "tax laws as obsolete as the machinery they force the textile industry to work with are resulting in the inexorable loss to industry of both domestic and world markets."

The Roberts president suggested two ways in which the Government can help: let the Internal Revenue Service provide a more realistic depreciation rate, and allow banks a special discount rate to encourage loans for the purchase by industry of new equipment for modernization.



**SAVE MONEY... USE**  
**HEANY**  
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New England Representative:  
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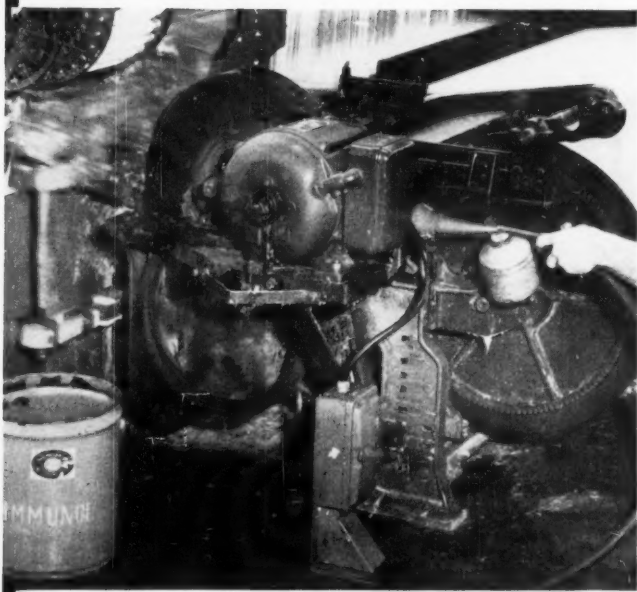


*Clean and Rustproof  
Textile Equipment with . . .*

**ELIMINATE THE  
FIRE HAZARD!**

# NON-FLAMMABLE, NON-TOXIC **Immunol**

REG. U.S. PAT. OFFICE



● IMMUNOL is safety insurance. Replace flammable solvents with this non-flammable, non-toxic solvent and you'll get these outstanding benefits:

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IMMUNOL can be used anywhere in the plant without danger of fire. In addition, it will not harm fabric or workers' skins. It is odorless so workers will not be affected when it is used.

## FASTER CLEANING

IMMUNOL quickly removes dirt, dust, oil, grease, soil, etc. from every kind of textile equipment. It cleans faster than ordinary solvents and it can also be used to clean woodwork, plastic and enameled surfaces.

## ECONOMY

1 part IMMUNOL to 20 parts water, either hot or cold, hard or soft, is sufficient for all cleaning operations. The cost of this mixture is less than 13c per gallon.

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IMMUNOL protects metal from rust as it cleans and the protective coating is so minute it cannot be seen or felt. No residual oily matter remains to hold dust, lint or dirt.

## Fibregard

REG. U.S. PAT. OFFICE

The original colloidal lubricant that will be of tremendous importance to you if you're processing man-made fibres. No other lubricant can provide the outstanding benefits FIBREGARD provides because it adheres uniformly to the smooth, glassy surfaces of the synthetics that normally repel moisture and other lubricants. Get details on this original Harry Miller Corp. product, too.

Textile mills throughout the country have been using IMMUNOL with outstanding success—and safety—for years. Write, wire or call for a free sample today.



Manufacturers of

● GLYCOLA ● FIBREGARD ● ACTIVOL  
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*Original Products and Processes Since 1936*

**4th and BRISTOL STS., PHILA. 40, PA.**  
**DAvenport 4-4000**

*Service Representatives in Principal Cities*

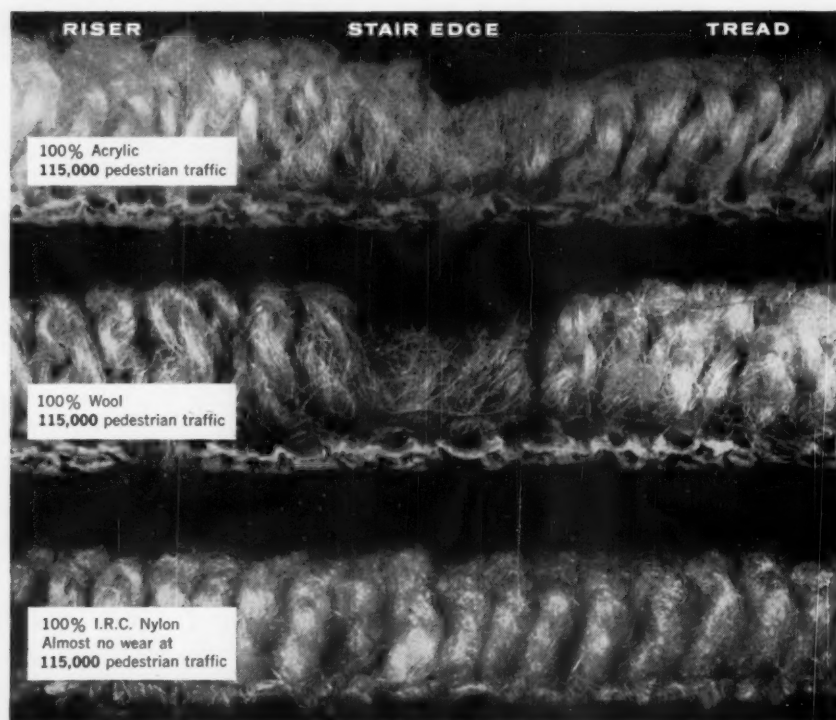
# name your carpet fiber... **NYLON** outwears them all!

"How does it wear?" That's one of the most important questions consumers ask. Permanent textures, recovery from crush, excellent resistance to matting, and great resiliency are other important

performance characteristics consumers ask about. Nylon has them *all*, as proven in *actual wear tests!* The toughest possible traffic test proves... *no other fiber adds durability to floor covering like nylon!*

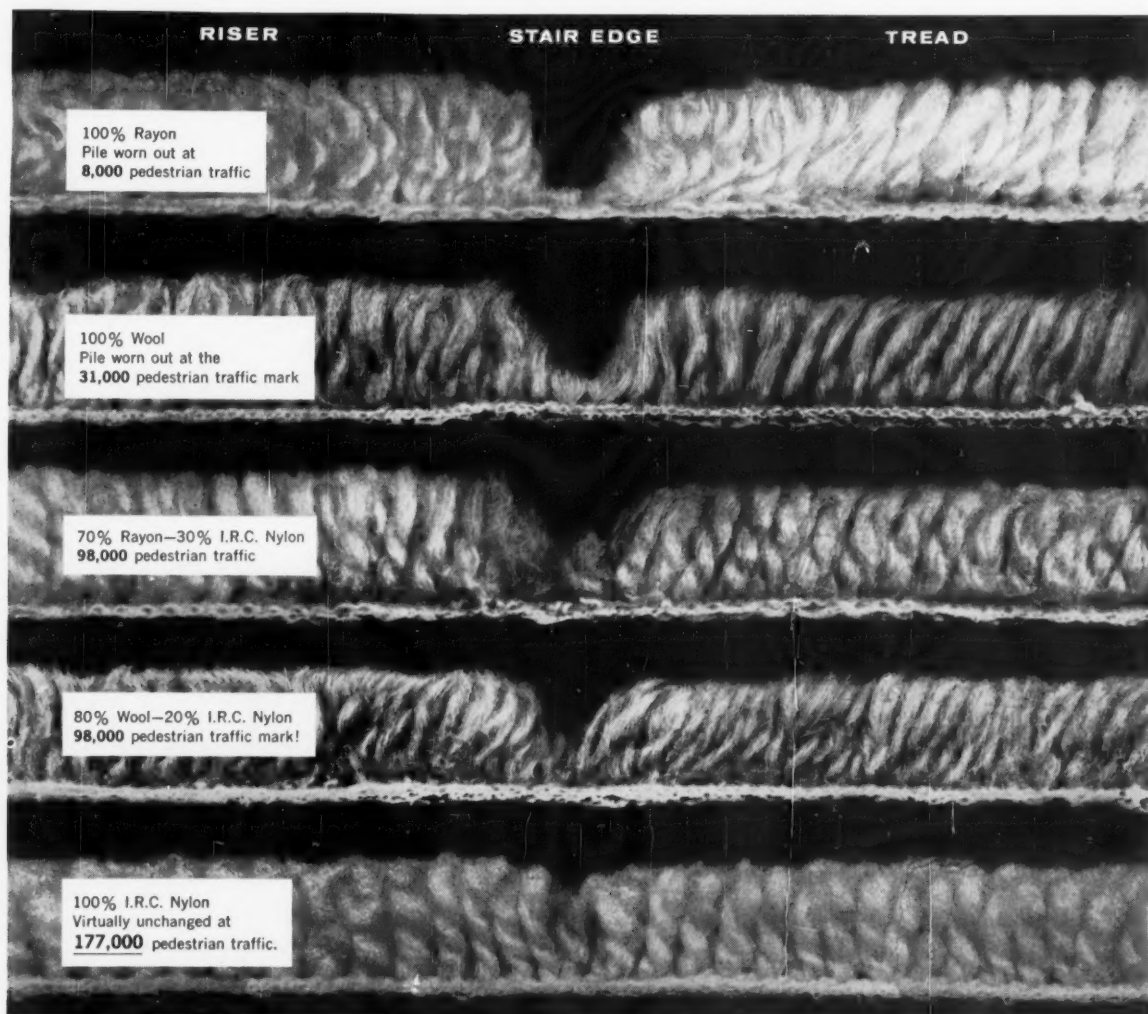
## TEST NO. 1... NYLON COMPARED WITH WOOL AND ACRYLIC CARPET FIBER

LOOP PILE CONSTRUCTION



## TEST NO. 2... NYLON COMPARED WITH RAYON AND WOOL

### CUT PILE CONSTRUCTION



### WEAR

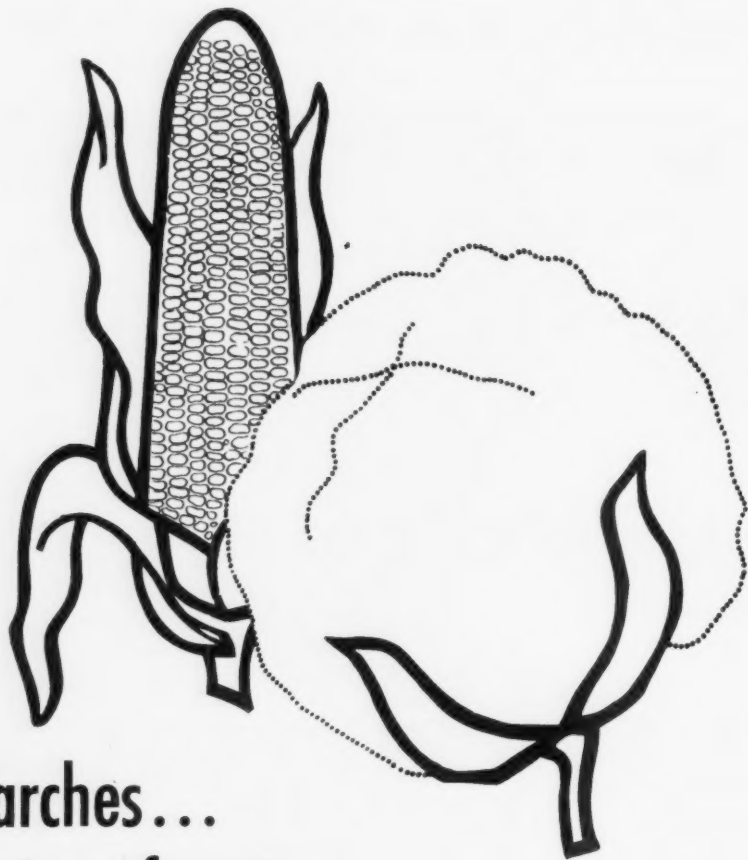
...Nylon outwears every other carpeting fiber known. In these tests identical, unpadded strips of carpeting were laid on bare, rough steps in an industrial plant. The strips shown in the unretouched photographs were rotated regularly. 100% rayon was removed after stair edge wore out—at only the 8000 pedestrian mark! The 100% wool was stopped at the 31,000 pedestrian mark. The test for the 70% rayon/30% nylon and 80% wool/20% nylon were stopped at 98,000 and for 100% nylon at 177,000. In the test of acrylic fiber and wool with nylon, the photographs tell the story!

**NOTE:** Do not compare the tests on these two pages. They are two entirely different tests and have no relationship to one another.



# I·R·C

INDUSTRIAL RAYON CORPORATION, 500 Fifth Avenue, New York 36,  
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## FABRICS

*...repel lint and dust • absorb moisture, like cotton • never cling or ride-up*

ASTON<sup>®</sup> is the only wash-durable anti-static for all synthetics and blends! Only Aston lets you add all the wanted features of natural fibers, yet retain every synthetic advantage—wash and wear, shape retention, strength. Applies like a resin finish to yarn, fiber or fabric with no special equipment. Wash the fabric. Dry clean it. No matter, Aston's on for the life of the garment! . . . Write for the amazing story of Aston and for any technical assistance you may need in applying Aston. Here is the *most wanted finish* since synthetics were developed! ONYX OIL & CHEMICAL CO., Textile Division, 190 Warren St., Jersey City 2, N. J.

**ONYX**  
CHEMICALS



*ask the man from Onyx*

No. 4 in a series—how your Du Pont salesman is backed by many sales-building activities including Fiber Research, Technical Service, Fabric Development and Merchandising.



## An ounce of **COLOR**—a pound of cure

In our picture, at The J. L. Hudson Co., Detroit, Jack Townsend, Du Pont merchandising representative, talks over results to date of one of Du Pont's advertising and merchandising programs.

Du Pont, along with leaders in the industry, recognized steps had to be taken to stem the eight-year decline in hosiery sales and prestige. In 1956 Du Pont surveyed women's attitudes toward hosiery to find out why they buy and wear (or leave off) stockings. Acting on the results of this survey, Du Pont laid plans to re-activate women's thinking in terms of color when buying hosiery.

Backed by enthusiastic industry affirmation, Du Pont formally introduced its program at the 1957 National Hosiery Manufacturers Convention. "Just a hint of a tint" emerged as the compelling theme of the most

FROM RAW FIBERS TO RETAIL SALES...



## for the hosiery industry

comprehensive hosiery advertising program in history. Fashion shows impressed the theme on fashion and public press. Du Pont supplied retailers with a long list of selling aids including an 18-minute sales-training movie. A continuing campaign of full-color advertisements carried "Just a hint of a tint" to the consumer. Du Pont's activities served as a rallying point. The hosiery industry and retailers multiplied the effort. Results to date indicate a brighter outlook for the hosiery industry . . . through color.

Du Pont believes it can increase the market for its fibers and thus benefit its customers by providing useful assistance to all levels of the textile industry. It's through your Du Pont sales representative that you, as a customer, have access to a range of technical and merchandising information unique in the textile industry.

**DUPONT BUILDS PROFITS FOR YOU**

FEBRUARY, 1958

### *Product and Process Notes from Du Pont*

**Reduced Fiber-to-Metal Friction**—Development work by Du Pont in yarn spinning has led to a method of reducing fiber-to-metal friction. This method calls for a matte finish (vapor blast plus chrome plating) on metal surfaces of textile machinery such as coiler tube gears, drawing spoon guides, doffer combs, roving flyers, spinning pencil rolls and guide surfaces. Use of this technique to date has resulted in processing improvements for "Dacron"® polyester staple. Check with your Du Pont representative for possible application in your mill.

**Textured Nylon as Base Yarn**—The use of textured nylon as a base yarn with spun "Orlon"® acrylic fiber yields fabrics with good bulk and size flexibility. Nylon contributes strength and durability; helps maintain washability and dimensional stability. These fabrics provide new opportunities in end uses such as sweaters and socks. Ask your Du Pont sales representative for more information.

**Nylon on Draw-Wound Tubes Improves Processing**—The use of draw-wound tubes in place of bobbins will improve processing for reverse twist to obtain S and Z plied yarns. These tubes are now available in all deniers.

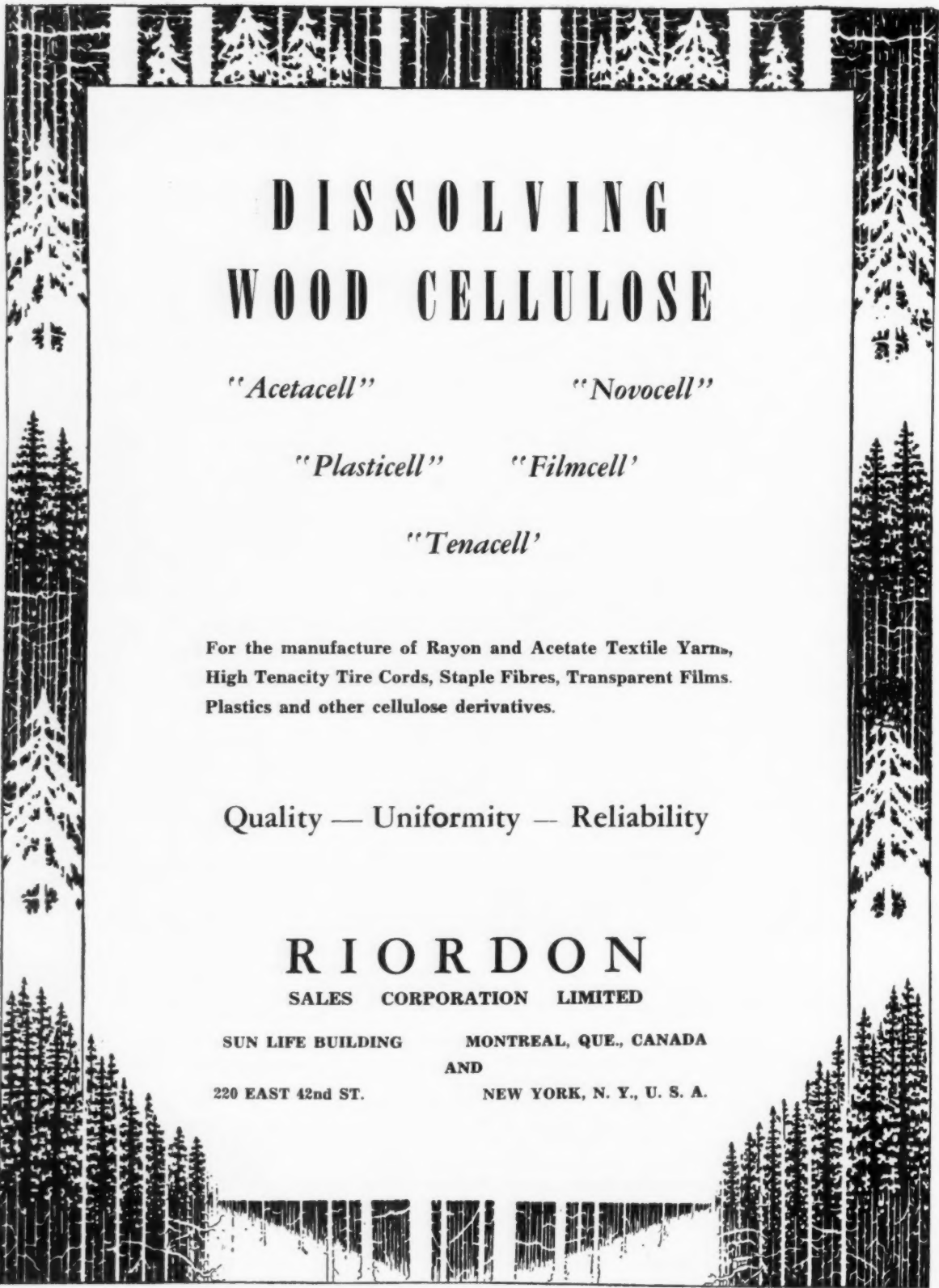
**Denier Blends of "Orlon"**—Blending deniers of "Orlon" can provide fabrics which range in hand and type from cashmere-like through shetlands, alpacas, and worsteds to coarser fabrics. 2, 3, 4.5, 6 and 10 deniers are available in regular and high-shrinkage staple.

**Technical Information Bulletins**—contain detailed, practical information on Du Pont product and process developments. They cover fiber properties, mill processing, dyeing, finishing and fabrication. Refer to your copies frequently; they can save you time and money. To be sure you have all the bulletins you need—check with your Du Pont salesman or Technical Service representative.

\*Du Pont's registered trademark for its polyester fiber.  
\*\*Du Pont's registered trademark for its acrylic fiber.



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... THROUGH CHEMISTRY**



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*"Novocell"*

*"Plasticell"*

*"Filmcell"*

*"Tenacell"*

For the manufacture of Rayon and Acetate Textile Yarns,  
High Tenacity Tire Cords, Staple Fibres, Transparent Films.  
Plastics and other cellulose derivatives.

Quality — Uniformity — Reliability

## RIORDON

SALES CORPORATION LIMITED

SUN LIFE BUILDING

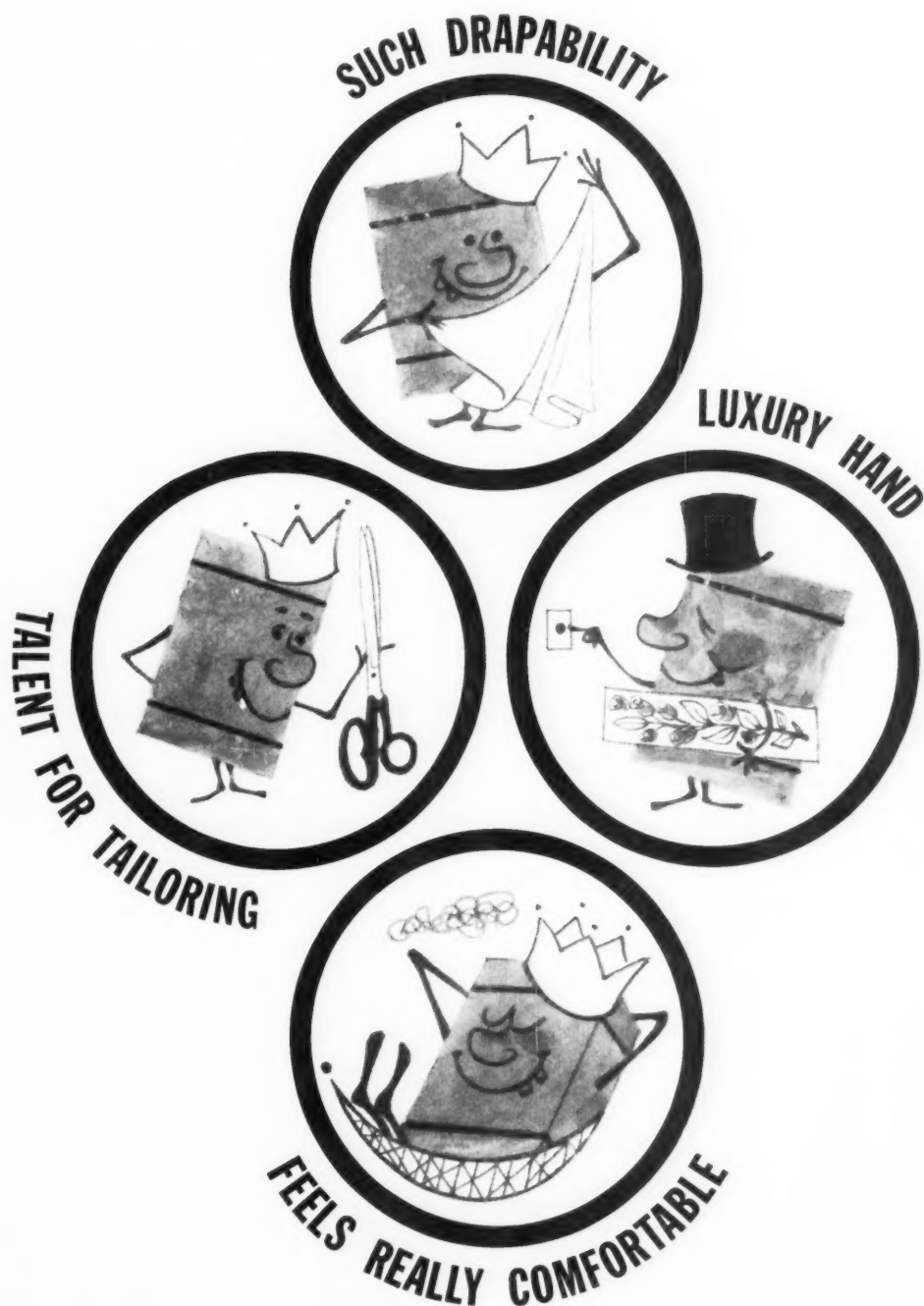
MONTREAL, QUE., CANADA

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220 EAST 42nd ST.

NEW YORK, N. Y., U. S. A.





# ALL YOURS WITH RAYON STAPLE

American Enka's new staple plant is an important new source for users of spun rayon.

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Sycamore Plant  
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Valleyfield Plant  
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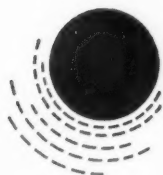
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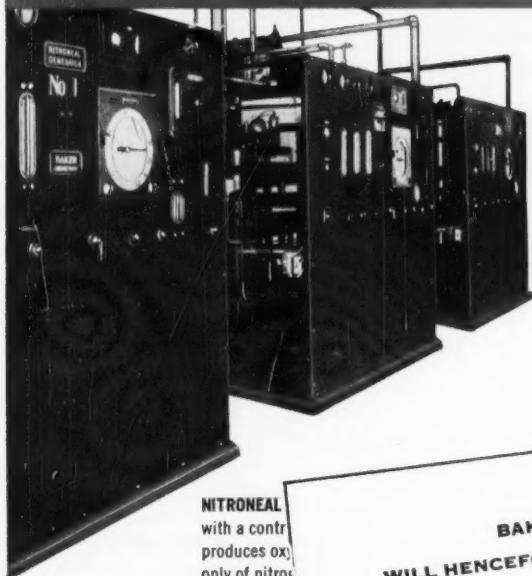


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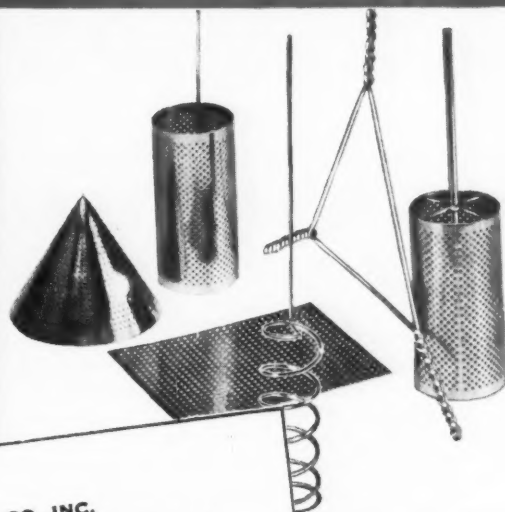


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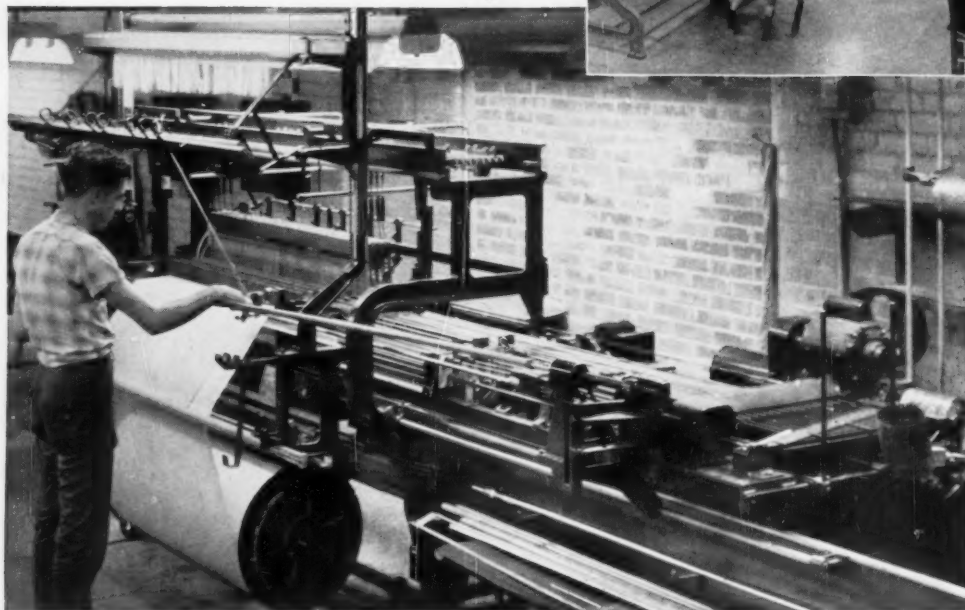
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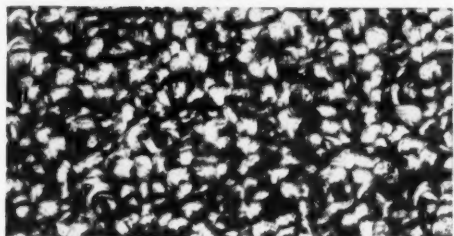
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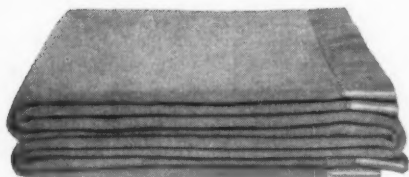
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# MODERN TEXTILES

## Magazine

### Publisher's Viewpoint

#### Cotton Millmen: Get Off That One-Fiber Hook

Cotton manufacturers are facing a serious shortage of cotton. Adverse weather conditions resulted in a poor 1957 crop. The crop failures were especially severe among better grades—staples of one inch or longer—which in recent years have been increasingly used by so many American mills that have been upgrading their products.

Some idea of the alarm of cotton manufacturers over the shortage of good cotton is given by the statement last month of C. A. Cannon, president of Cannon Mills. Appealing to the Secretary of Agriculture to take steps to remedy an impending cotton shortage, Mr. Cannon said that "the situation, for farmers and mills, is one of crisis."

Mr. Cannon, speaking as chairman of the Special Cotton Policy Committee of the American Cotton Manufacturers Institute, urged legislation that would lead to planting of increased cotton acreage; assure competitive pricing and produce in 1958 a sufficient supply of quality cotton for nearby consumption and reasonable carryover.

We sympathize with the plight of the cotton textile manufacturers, an industry whose importance in the overall textile picture is indicated by the fact that in 1957 it had more than 21 million spindles in place, and in 1956 (the last year for which figures are available) turned out more than 11 billion yards of cloth. For an industry of such stature to be dependent upon one fiber, cotton, and only cotton, puts it indeed in a highly vulnerable position, as many thoughtful cotton millmen are beginning to realize.

And the extreme vulnerability of the industry's dependence on cotton is made even more precarious when we realize that adequate supplies of this fiber are dependent upon unpredictable and uncontrollable weather conditions. And then, of course, we must face up to the harsh fact that crop failures are not the only threat to the supply of good quality cotton. There are the activities of government and politicians who, as many cotton manufacturers fervently attest, can be worse enemies of plentiful supplies of reasonably priced cotton than even adverse climatic conditions.

The current serious shortage of good cotton may bring home at long last to cotton manufacturers a truth which should have been apparent to them long ago: *they do not have to be dependent upon one fiber*. There is no need for them to box themselves in a narrow corner

and place themselves at the mercy of crop failures and vote-hunting politicians. Modern technology has provided them with man-made fibers, such as, for example, rayon, acetate, nylon, the polyesters and the acrylics, which blend well with cotton and give superior performance qualities to the standard fabric constructions which have been cotton's chief uses.

The dark cloud of cotton shortage may turn out to have a silver lining if cotton millmen will open their minds to the proven values of man-made fibers. The Chinese tell us that in their language the word, "crisis," means both danger—and opportunity. The cotton shortage which Mr. Cannon, as spokesman for the ACMI, calls "one of crisis," can serve as the big opportunity for the cotton industry to get off, definitely and forever, the painful hook of dependence on one fiber.

The man-made fiber producers stand ready to help them with expert counseling on how to make greater use of man-made fibers in blends with cotton. There is no reason, except narrow prejudice and backward-looking refusal to move with the times, why every producer of cotton cloths cannot make far greater use of man-made fibers.

Those all-cotton men who still think that cotton is the only fiber might take to heart the words spoken by Theodore V. Houser, chairman of Sears Roebuck, at the annual meeting of the Cotton Council last month. Urging greater use of man-made fibers blended with cotton, he said that, "unlike the simple days of cotton, silk and wool, we have today an extremely wide range of end uses, each requiring a somewhat different balance of physical characteristics . . . No single fiber, either natural or man-made, has all the qualities best for a given purpose. A vast amount of research and experimentation is constantly going on to find out what combination of fibers can be made to meet a given set of physical specifications and properties."

Cotton men have only to take advantage of this research to produce better fabrics than has been possible with all-cotton; and they can thus provide themselves with an alternative supply of fibers—a supply not dependent upon changes in the weather and not subject to manipulation by politicians eager to win re-election. Here indeed is a great opportunity for the hard-pressed cotton manufacturing industry.

*A. H. MacCallough*

# OUTLOOK IN TEXTILE MARKETING

By the Editors

## That hard core of the soft goods market

Textile marketers can take whatever satisfaction there is—small as it may be—in realizing that they are no longer alone. Other industries are having sales troubles, too. Business is slow in most major areas of the economy. Unemployment during January passed the 4 million mark. Steel ingot output dropped below 70% of capacity in December and auto makers laid off 90,000 workers over the year-end holidays. Most business leaders feel that the next six months will be difficult.

**Yet Overall Outlook Is Good**—But the evidences of business decline, although it is foolish to ignore them, show only one side of the picture. In spite of the fact that 1957 ended in a general business ebb, the year was a remarkably good one for virtually all Americans. Personal income, consumer spending and gross national product (the sum total of all goods and services produced) set new and impressive records, as was noted in the January Monthly Letter of the First National City Bank of New York.

Even the retailers, those chronic woe-criers, had a wonderfully good year. According to the Monthly Letter, retail sales for 1957 when final figures are compiled, are expected to reach the \$200 billion mark for the first time ever. This figure will be a 5% increase over 1956 business. During 1957 also, construction rose to a new peak for the 11th successive year while business investment in new plant and equipment climbed to a record \$37 billion. And last but not least in importance, more Americans were at work during the year, earning higher wages than ever before. In view of these indisputable facts, business in the United States is operating at a tremendously high level of prosperity even if the current downturn is given full weight.

**For Textiles Neither Bust nor Boom**—What does all this mean to the textile industry? It means that there is no reason for inordinate gloom and no reason for elation. Despite the present slump, there is going to be a tremendous demand and a tremendous amount of buying of consumer goods made with fabrics. A business downturn, even unemployment of the family's chief wage earner, is not going to stop the millions of American women who run homes from buying new towels, new sheets, new clothes for the children when they are needed.

This basic demand for a thousand-and-one items made of cloth for apparel and household use is *the hard core of the soft goods market*. It must be remembered that most textile items sell for under ten dollars and often much less. Reduced family income may slow the purchase of big ticket items like new television sets, new washing machines or new cars, but it has less effect on the buying of textile necessities.

**Textile Upturn Not Impossible**—No one, of course, can tell how textile sales will go in the next six months. Such outstanding industry leaders as Ceasar Cone, president of Cone Mills and Spencer Love, chairman of Burlington Industries, stated recently that it was not possible to predict the course of textiles in the months ahead. Nevertheless, it is well known that mill inventories are low. Retailer inventories of textile end products are also low. These incontrovertible facts plus the additional powerful fact that there are 171 million Americans all wearing clothes and 49 million American households all wearing out fabrics from dishcloths to wall-to-wall carpeting, means that there is going to be a tremendous quantity of cloth in one form or another bought and paid for in the United States in the next 12 months. Textile marketers: the business is there. Go out and get your share!

# STRETCH & BULK YARNS

**what they are  
how they differ  
their uses in the future**

**By Martin H. Gurley, Jr.**  
TEXTILE CONSULTANT

**W**HILE the title of this article appears to indicate that stretch yarns and bulk yarns are different in nature, I consider stretch yarns to be merely bulk yarns with extended horizons. All bulk yarns can be classified either as "torque" or "no-torque." Torque yarns, when permitted to hang free, rotate clockwise or counterclockwise as they unravel. No-torque yarns exhibit little or none of this tendency.

A second method of classification divides the bulk yarns into "bulked" and "bulky," according to whether the bulkiness is innate or induced.

The British textile industry has recently defined bulked yarns as follows: "Those yarns which have been treated physically or chemically so as to have a noticeably greater apparent volume or bulk, sufficiently stable to withstand yarn processing tensions and the normal forces exerted on garments during wear." (*Journal of the Textile Institute*, 1956. 47 (4) p. 820.)

Bulky yarns are those in which the apparent mass of the fibers is much greater than it is in reality. This group includes yarns made with fibers that are hollow, extremely irregular in cross section, or very resilient. The physical characteristics of the latter two types prevent close packing of fibers in spinning and weaving, thus increasing the covering power of the resulting fabric.

At present, none of the bulky yarns can be regarded as stretch yarns. In addition, all of them are no-torque yarns.

While this paper is concerned primarily with polyamide and polyester yarns, the processes described in many cases were developed originally for viscose and acetate yarns.

The history of bulk and stretch yarns is entwined with that of the search for a satisfactory method of producing synthetic fibers capable of replacing wool.

While the textile industry was still absorbing artificial silk, now called rayon, various groups of investigators were seeking ways to manufacture an artificial wool. It was this work that eventually developed the bulk yarns of today. In the late 1920s, bulky yarns were made from hollow fibers prepared by the incorporation of air into the liquid from which the yarns were spun. Some bulky yarns were made from unstretched viscose fibers that, while of low tensile strength, possessed the resiliency and irregular cross section necessary for the production of wool-like yarns.

In the mid-1930s, a series of patents, in particular those granted to various inventors working for the Heberlein Patent Corp. and the Celanese Corp., claimed that wool-like yarns could be made from rayon threads by twisting such yarns to at least 4

times the conventional number of turns per inch, setting the twisted yarn in wet steam, drying it, and then back-twisting it to the starting point. It was claimed that this effect could be secured equally well by the use of a false-twist spindle with heated yarns, particularly thermoplastic yarns such as cellulose acetate. The same group of patents demonstrated that yarn so treated could be reeled into skeins and steamed at a pressure of 3 atmospheres to secure an increased circular crimp or, as we are terming it, bulk.

As late as 1947, a British patent was issued to Heberlein that covered a process for making wool-like fibers from cellulosic fibers by treatment with a swelling agent, then giving the yarn a temporary high twist in a false-twist spindle, and then stopping the swelling action immediately.

It is quite possible to secure satisfactory bulk with viscose and acetate yarns. The bulk of viscose yarns can be preserved by a reaction involving formaldehyde, according to one patent (U. S. 2,304,089 Dec. 8, 1942, George Heberlein).

The bulking effect is retained in thermoplastic yarns such as secondary cellulose acetate if the strains imposed do not exceed the elastic limit of the base yarn. With this knowledge it appears possible to use bulk cellulosic continuous-filament yarns in clothing and industrial fabrics.

All of these patents, while they concern cellulosic yarns, describe processes that, when applied with suitable changes in temperature to polyamide or polyester yarns, produced bulked torque yarns that yielded a surprising dividend; that is, "stretch."

Stretch yarns are continuous-filament bulked yarns that have been deformed physically and set to develop not only a high degree of potential stretch, but a usefully rapid recovery. Both torque and no-torque yarns can be found among the present stretch yarns.

Torque stretch yarns are continuous-filament yarns that have been subjected to suitable combinations of twisting, heat setting, and chemical action. In the Helanca\* process this effect is accomplished by twisting the yarn to a high number of turns per inch by the use of conventional twisting machines. The highly twisted yarn is then steamed in an autoclave at a steam pressure of 15 pounds or higher. The yarn is then dried and back-twisted through the point of origin. Similar yarn is produced in a continuous process when heated yarn is passed through a false-twist spindle.

In the special case of monofilament yarns, heat setting can precede twisting. There is no back-twisting in this case.

(Continued on Page 50)

\* Registered trade-mark of the Heberlein Patent Corp., New York, N. Y.

For decades Cone Mills meant denims, corduroys, twills and other workaday fabrics. Now something new has been added. Keeping up with changing ways of living, Cone has given variety and fashion excitement to its lines

## They're "styling up" at

**C**ONE MILLS, that truly gigantic textile organization of 18 separate fabric manufacturing and finishing plants, equipped with the awesome number of 560,000 spindles and 14,000 looms has successfully managed a big turn in its basic direction. The Cone Mills of today is not the Cone of a decade or even five years ago. The old Cone Mills was overwhelmingly committed to making tremendous yardages of denims and twills and thickset corduroys. The new Cone Mills sees its salvation in providing customers with style goods, in dressing up the old fabric with color and variations in weaves, and in taking the lead in speeding obsolescence of today's leisure wear so that consumers will want the newer things tomorrow.

Although Cone has changed and is still changing, its new directions flow logically from the company's long established position as the industry's overwhelmingly predominant leader in the field of traditional work fabrics. It is not wrong to say that the change at Cone has been dictated by the irresistible necessities of today's changing textile market, and, behind it, the rising apparel standards of American consumers.

"Since the war," Tom Hood, one of Cone's merchandising vice presidents points out, "the demand for work clothing has stood still or actually fallen down a little. But the demand for play clothes—sportswear, leisure wear, informal wear—whatever you want to call them—has increased greatly. This is the area where growth has occurred in the broad field of medium priced cotton apparel fabrics." To meet this new breeze blowing strongly through American life, Cone has trimmed its sails and altered its course.

The clue to what has happened to Cone can be found in what happened to denims. For generations, low-priced, durable denims were worn by working men as overalls and dungarees. Making good denims to meet this need, Cone Mills, under the reticent and astute management of an earlier generation of Cones, thrived mightily. The company's Proximity and White Oak mills at Greensboro became famous for their overwhelming total of more than 5,000 looms all pounding out denims.

Such an enormous capacity for denim cloth in the decades of Cone's early growth answered the need of the times. In an increasingly industrial society, increasing numbers of workers found cotton denims a

comfortable and durable fabric to work in. Steel puddlers wore denims; carpenters sawed and hammered in denims; railroad men drove trains in denims; farmers plowed in denims; ranch hands herded cows in denims. Over the years, an increasingly large portion of these denims came from Cone looms. The company produced blue denims and brown denims, and also several types now long forgotten such as "goldbacks" and "redbacks" popular along the Missouri and in the far west.

### Everybody Took to Denims

Oddly enough, as the country grew richer and machines did more of the work and men had more time for leisure, denims turned out to be a lucky fabric for a big cotton operation to be heavily dependent on. Unlike so many fabrics once popular and now forgotten, denims appealed to millions of Americans with more and more free time on their hands. They became the preferred fabric for informal and folksy dress. Practically everyone under 70 took to wearing denims when they were not dressed "to go out." Young and active housewives wore them instead of the house dresses of their mothers; fathers took to wearing denims puttering around the house; children were garbed in denims before they were finished with diapers; teen agers made a uniform of them, seeking in tight-fitting cowpoke denims to obtain physical confirmation of their fantasy picture of themselves as tough hard-riding hombres.

All this was done largely in blue denims. Meanwhile the stylists latched onto the popularity of denims by bringing out a host of fancier denims—denims in a wide range of colors; striped and patterned denims. To Cone, the biggest producer, the trend toward lighter, more colorful denims was meat and drink, and the company was quick to fall in step with it. The fact that the fashions of the times could convert the most utilitarian of fabrics into a semi-fashion item was not lost on Cone's management. The trend was in fact the start of a movement within the company that has broadened until it is today the key to the many changes that have taken place at Cone during the past few years, and also, perhaps, the key to the company's future.

Denims are by no means Cone's only product. No sooner had those remarkable brothers, Moses and



By Jerome Campbell  
EDITOR, MODERN TEXTILES MAGAZINE

# Cone Mills

Ceasar Cone, got started in denim production than they branched out into other cotton staples. Flannels were among the first of these; in time Cone became the leader in flannels equalling its leadership in denims. In 1930, Cone moved strongly into another traditional cotton utility fabric, corduroys. In subsequent years, adhering to its close identity with work fabrics, the company became a large producer of a variety of twills.

Thus a few years ago, Cone Mills, after six decades of steady and rapid growth, stood huge on the Southern textile horizon as the world's largest manufacturer of denims, flannels and corduroys. It was a substantial producer of many other cloths as well and the operator of an important fabric printing business.

## Cone Adapts to a New Environment

A textile manufacturer so huge, so deeply committed to utility fabrics might have shown itself too clumsy and slow-moving to adapt itself to new conditions, and like the dinosaurs of the prehistoric past, faced extinction. But Cone has moved nimbly and cleverly to meet the changes in consumer demand, to keep profitably abreast of the changing ways of life in America.

Led by its president, energetic, plain-speaking Ceasar Cone (son of founder Ceasar) the forward-looking emphasis at Cone Mills has shifted from work fabrics to fabrics for sport and leisure wear. This does not mean, however, that Cone, with its tremendous aggregation of spindles and looms, its annual fabric output running at 400 million yards a year, is becoming "high style" with all its connotations of limited runs and confined sales. "Our operation is geared to big volume production and sales," Ceasar Cone declares emphatically. "It is only by producing really huge yardages of any one fabric that we can even hope to make money."

But while Cone remains geared to big volume, the nature of such volume has changed. "Not too many years ago," says Ed Holt, Cone's vice president in charge of sales, "it was not unusual for one of our salesmen to pick up the 'phone and sell a million yards of denim. Today that is no longer possible. In fact, it is unlikely that we can sell a million yards of any one fabric under any conditions. In the kind of



Ceasar Cone, president  
of Cone Mills Corp.

market that exists today, we no longer think in terms of millions of yards of any given construction. Variety and change is what is wanted even by the makers of volume-priced work and leisure clothes. Here at Cone we are working to give our customers the variety and constant change to new things that they, as garment manufacturers, need to keep *their* sales healthy."

Putting it another way, Tom Hood says that staples are no longer profitable. To make money today a mill has to style up the old constructions even in the standard twills of work clothing fabrics. He cites as a typical example of the new Cone way of operating the history of the 8 ounce carded sateen slack fabric which the company calls its Galatea di Roma. At about 60 cents a yard, the fabric, vat dyed with an easy care resin finish, has been tremendously successful during the past few years during which it fitted well into the vogue for "polished" cotton slacks and other outerwear worn by younger people.

## Moving Ahead of Competitors

Virtually established now as a staple, the cloth is well on its way to becoming profitless due to the fact that many other mills have climbed on the bandwagon of its popularity. Tom Hood and other Cone merchandising strategists months ago realized that time had come to speed this fabric's obsolescence by changing it a little—by giving it new style effects to raise it once more to the status of a novelty that can be sold for a more satisfactory price. And so they are in the process of adding a variety of woven self stripes to the cloth—a style note that will intrigue consumers, they hope, and move them to buy more slacks before last years' plain colored "Galatea di Roma" pants are worn out.

(Continued on Page 56)

# Mill test procedures for better woolen system yarns

By Norbert L. Enrick\*

**M**ILLS processing woolen yarns or synthetic blends on the woolen system require a number of special test procedures, not previously covered in this series. These include the following:

1. Hopper Feeding Percentage
2. Woolen Card Weigh Pan Variation
3. Roping (or Roving) Weighing Check
4. Jackspool Weight Variation

Tests (1), (2) and (4) above are generally performed once every five weeks on all equipment, although some mills prefer to perform (1) and (2) weekly or bi-weekly. Test (3) is of such great importance to costs and quality that it should be performed at least once per shift. Preferably, roping weighing checks are made not just once, but two or three times in each shift. In addition, careful records and control charts should be maintained, showing the trends in average weight and variation for each blend processed. This enables management and supervision to take the proper corrective action to maintain blend characteristics and roping and yarn weights. This in turn helps maintain uniformity of weights and quality in weaving. For example, a heavy end in cloth calling for expensive mending, may have originated in the cards.

## ROPING WEIGHING CHECK

### Purpose

This test provides periodic checks on the care with which card tenders weigh and mark jackspool weights from their cards.

### Equipment

Sizing board with 1 and 1 1/4 yard markings. Grain scale or quadrant.

### Sampling

Perform checks at random intervals on randomly selected jackspools, thereby assuring that the tender will not have advance clues as to which of his spools might be checked and when they will be checked.

### Procedure

1. Unwind the yardage shown below from each jackspool.
2. Fold the ends to lay double on the sizing board.
3. Cut the ends on the proper mark.
4. The yardage unwound and cut mark selected are:

Ends/Spool	Yard Unwound	Cut Mark Used
24	3 per end	1 1/4 yds.
30	2 1/2 per end	1 yard

This yields 60 yards of roping per spool.

5. Weigh and record the grains per 60 yards found.

### Evaluation

Compare the actual weight against the weight marked by the tender and against the standard for the roping and blend produced. Note any deviations from allowable tolerances.

Improperly marked spools will defeat spool matching in spinning, while excess deviations from standard weight may result in extra costs or poor quality in spinning.

## HOPPER FEEDING PERCENTAGE

### Purpose

In order to obtain maximum opening of stock in the feed box and minimum variation in pan weighings, the feeding percentage of the automatic hopper feeder in back of the woolen card requires periodic control testing.

### Equipment Required

Stop watch.

### Sampling

Make four determinations on each card.

### Procedure

1. From the stop-watch, read the seconds required to fill the weigh pan. This represents the feeding time.
2. Next determine the total seconds between droppings. This represents the cycle time.

### Evaluation

The feeding percentage is found from the formula:

$$\text{Feeding \%} = \frac{\text{Total Feed Time in Seconds}}{\text{Total Cycle Time in Seconds}} \times 100$$

An additional useful evaluation is provided by determining the range, in seconds, of the four feeding times and four cycle times.

## WOOLEN CARD WEIGH PAN VARIATION

### Purpose

Carefully controlled uniformity of weight of pan droppings will aid in the maintenance of uniform roping and yarn.

### Equipment Required

Pan scale, sensitivity 0.5 ounces, capacity 4 pounds. Heavy kraft paper, approximately 30 x 60 inches.

### Sampling

Perform four weighings on each card.

### Procedure

1. Wait for pan to be fully fed.
2. Trip lever, permitting contents to fall on kraft paper placed under pan.
3. Weigh contents.

(Continued on Page 60)

\* Institute of Textile Technology, formerly with Werner Textile Consultants.

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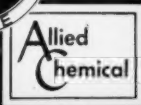
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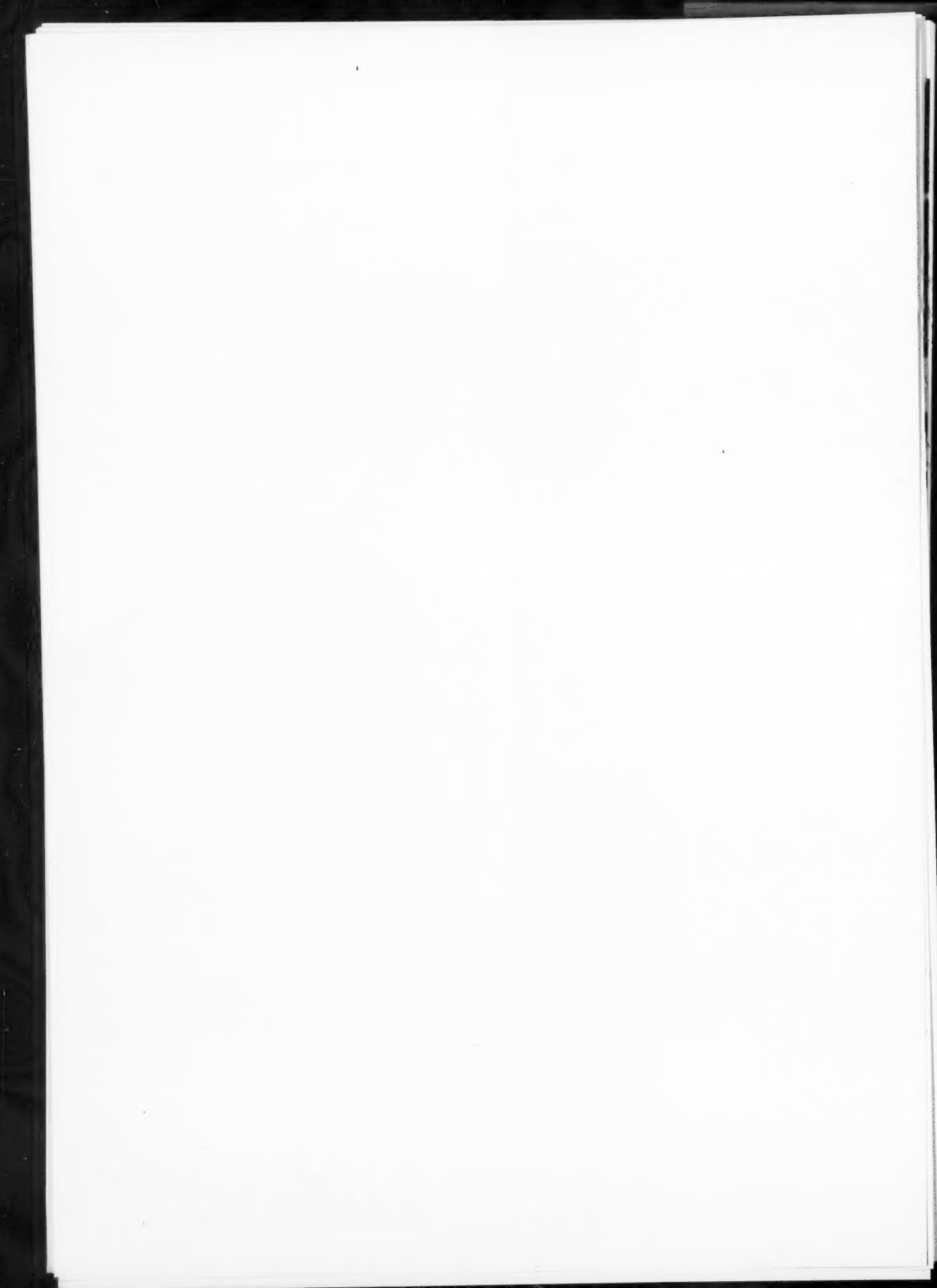
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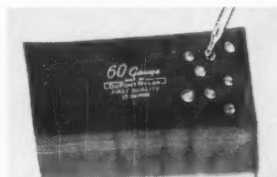
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## REPORT FROM EUROPE



BY SPECIAL CORRESPONDENT

### Germans, too, are producing polypropylene fibers

**FRANKFURT**—Fast-moving trend to make textile fibers from polypropylene now includes West Germany. Montecatini of Milan, Italy, holds patent rights for polypropylene fibers. But commercial production of polypropylene on small scale recently started at Farbwerke-Hoechst. Another firm, Hibernia Stickstoffwerk of Herne, in Westphalia, is about to increase its pilot plant operation.

Prof. Karl Winnacker, managing director of Hoechst, declared that his company's sales in 1957 ran some 15% higher than 1956. He said totals probably hit 1.7 billion DM (some \$420 million) of which 30% were export sales. The company is planning to invest about 200 million DM (some \$50 million) this year. Research expenditures have been running to 5% of total sales—or 85 million DM.

**Readying Polyester Plant**—Hoechst is completing a raw material plant for Trevira polyester fiber and filament at Offenbach. Fiber production is at Bobingen . . . Some German man-made fiber producers have begun making bookcloths of rayon staple . . . French and Finnish currency devaluations have eaten into Germany's export sales.

**Foreign Trade with a Twist**—Some months ago, Sweden protested that Switzerland was dumping nylon stockings into Sweden. The ethical Swiss were considerably upset—until recently when the mystery was clarified. The hose, marked "Swiss Nylon Stockings," were actually made in East Germany, then exported to Sweden by the Swiss representative of a West German company.

**Swiss Stretch-Yarn Developments**—Some Swiss mills have begun using Helanca stretch-yarn along with mixture of other man-made fibers, some of non-stretch type. The French Jantzen, for example, is using a knit cloth for swim suits. Early next autumn, a wool mousseline-type non-stretch cloth, with wool warp, and nylon and Terylene filling combined with Helanca for bulk, will be offered.

**French Gird for "Euromart"**—Europe's history making Common Market, which got underway last month, was credited with merger of two French chemical, dye and paint manufacturers. Ets. Kuhlmann, which holds a number of man-made fiber patents, bought out dyestuff firm of Matieres Colorantes de Saint-Denis, with a \$6 million capitalization. Merger brought Kuhlmann's share of French dyestuff production to 75%. It should place the company in a good competitive position with all European dye makers—including German.

French rayon exports in 1957 are expected to total about 11,000 metric tons, compared with 13,326 in 1956. Staple exports were estimated at 9,000 tons, against 11,163 in '56. Staple fiber imports were thought to have risen last year to 3,300 tons from 3,106.

**Austrian Loom Capacity Up**—Austrian silk and rayon capacity, which was able to turn out a scant 2.5 million meters just after World War II, is now producing close to 25 million. Loom capacity rose from 1,100 to 2,600 of which 500 are modern automatic types. Vorarlberg, center of the trade, is now making swim suits from Orlon acrylic fiber. Vorarlberg mills, incidently, for the first time in 30 years, are installing new German, Swiss and Italian embroidery frames. There are an estimated 600 of them installed, with exports picking up to West Germany, Britain, the Benelux countries, Sweden and Australia.

**Sweden Backs "Scando-mart"**—Textilraadet, Sweden's Textile Advisory Council, would support a movement to create Scandinavian Common Market along the lines of new "Euromart." Sweden now imports 30-40% of its textile needs, while paying near-top European wages. But salaries in other northern European nations are roughly in balance, as against lower wage levels in most European nations to the south. Export dumping of East European textiles, allegedly via West Europe, could also be better controlled, it is felt.

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# 420 nylon in your mill

## Here's Du Pont's advice on how to blend the new staple with cotton

**D**U PONT 420 nylon is a new high tenacity, semi-dull, uncrimped nylon staple having an initial modulus very similar to that of cotton. It is designed primarily for use in low percentage blends (15% to 25%) with cotton, to improve strength and durability in the resultant yarns and fabrics.

In contrast to the slight strength losses which are noted in cotton yarns when small amounts of regular (Type 200) nylon staple are added, an increase in yarn and fabric strength of up to 25% can be realized when the new Du Pont 420 nylon staple is used in the same blend proportions. Garments of fabrics containing this new nylon staple show greatly improved resistance to abrasion—up to 2½ times more than 100% cotton in many cases, according to the manufacturer.

Du Pont 420 nylon currently is available as 2.2 denier per filament in 1½ inch length staple.

### Opening and Blending

Du Pont 420 nylon staple is pre-opened before shipment. Thus, it does not require further opening in the mill. However, it is suggested that it be removed from the bale approximately 8 hours prior to its use to allow it to condition at mill temperature and humidity.

Because Du Pont 420 nylon is uncrimped it does not process satisfactorily in 100% form. This makes stock blending necessary. The cotton component should be opened and cleaned and the desired percentage of nylon added before picking.

### Tinting

Only the cotton component of the blend should be tinted. Excessive moisture, such as might result from heavy applications of aqueous tinting solutions, can cause Du Pont 420 nylon to shrink, effecting a change in its initial modulus. Therefore, any wetting-out of Du Pont 420 nylon before it reaches singles yarn may result in a loss in yarn strength. By applying the tint to cotton only, the water is absorbed initially by the cotton and any transfer of moisture to the nylon fibers after blending is usually not great enough to affect appreciably the initial modulus.

**CAUTION:** While card room and spinning room fly is not a major hazard, proper caution should be exercised to prevent mixes.

### Picking

Stock blends of Du Pont 420 nylon and cotton will process readily on either standard continuous cotton pickers or two process cotton pickers. Kirschner beaters are preferred where available but are not necessary. It is not necessary to adjust the grid bars or modify the picker settings unless a considerable amount of nylon is found in the picker waste.

### Carding

Low percentage blends of 2.2 denier, 1½ inch, Du Pont 420 nylon staple and cotton may be carded at standard production rates with regular settings used

for 100% cotton. Blends of 75% cotton, 25% nylon have been carded at 12 lbs. per hour. With continuous strippers, carding rates of 18 lbs. per hour may be achieved. A build-up of nylon fiber on the cylinder may occur initially but this usually levels off without affecting the quality of the carding. A fancy is not required.

### Drawing

Blends containing low percentages of Du Pont 420 nylon can be drawn satisfactorily on any of the standard types of draw frames. In some cases, (with 1 1/16" cotton and 1½" nylon), roll settings normally used for 100% cotton have been used without difficulty. However, it may be necessary to open the roll settings somewhat, being careful not to lose control of the shorter cotton fibers.

### Roving

Conventional inter-draft roving frames and most long draft roving frames are suitable for processing blends of low percentages of Du Pont 420 nylon with cotton. Some modification of roll settings possibly may be required but initial processing should be attempted with regular cotton settings. Front roll speeds normally used for cotton may be used. A slight reduction of twist in the roving usually improves drafting at spinning. Synthetic cots such as "Accotex" J-490, or "Dayco" EW-661, are suggested if static difficulties such as fiber licking-up or roll lapping are encountered.

### Spinning

The spinning of blends of cotton and nylon on either conventional or long draft frames differs very little from spinning 100% cotton. Here again, as in roving, it may be necessary to open roll settings slightly when using a blend of 1½" nylon and short staple cotton. Also, synthetic cots may be necessary if static difficulties occur. Slightly higher twist than is used for comparable cotton yarns is suggested to avoid possible pilling of the fabric. In general, spinning efficiencies of blends of cotton and 10%-25% Du Pont 420 nylon staple are higher than for all cotton and the spun yarns are stronger, less neppy, and more uniform, resulting in higher appearance ratings.

### Sizing Spun Yarns

Medium and coarse count yarns containing up to 25% Du Pont 420 nylon have been slashed successfully with regular size formulations used on 100% cotton yarns. No experience with fine count warp yarns is available. If poor results are encountered in either slashing or weaving, the addition of 10% (based on weight of the starch) of "Elvanol"† 72-60 or "Elvanol" 51-05 to the normal size formulation should provide satisfactory operability.

\* Armstrong Cork Co., 8400 Arch Street, Lancaster, Penna.

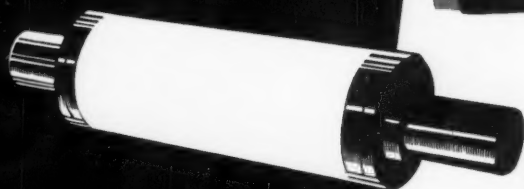
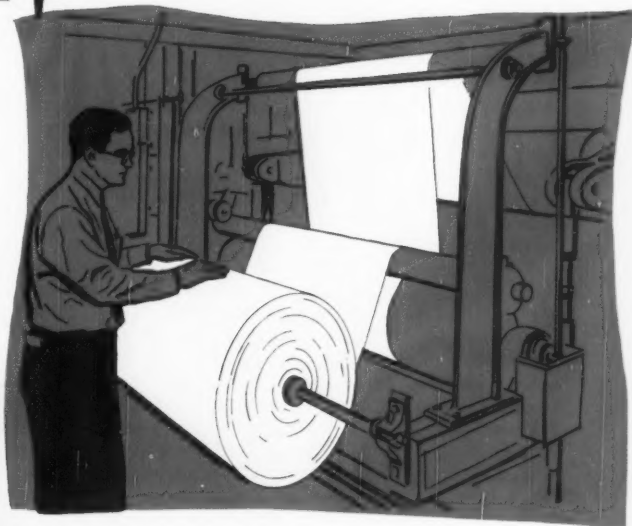
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# Cross-dyeing Arnel Mixtures

**New technique permits unlimited color combinations from a single dyebath**

**F**ABRICS CONTAINING ARNEL, the new triacetate fiber of Celanese Corp. of America, can now be cross-dyed when the Arnel in the fabric is combined with acetate-rayon or acetate-cotton. Cross-dyeing, the process of obtaining a combination of colors and patterns from a single dye bath, has required the development of entirely new techniques for application to Arnel, according to Dr. Reiner G. Stoll, director of Celanese's textile applications and product development laboratory in Charlotte, N. C.

The chief advantage of the new techniques, Dr. Stoll said, will be greater flexibility and economy for converters handling fabrics containing Arnel. Cross-dyeing of Arnel goods will permit converters to prepare readily fabric color combinations to meet changing style demands from a single greige goods inventory that does not become obsolete stylewise. He also pointed out that the single dye bath method of creating multi-color fabrics is less expensive than the alternative one of weaving yarn-dyed cloth.

According to Dr. Stoll, the new cross-dyeing technique can be described in detail as follows:

Basically, Arnel is dyed by the same class of dyes as acetate. However, by proper selection of dyes and dyeing conditions, different colors and a wide variety of related and tone-on-tone shades can be achieved by dyeing acetate and Arnel in the same dye bath. Add to this the color styling effects obtained by the use of combination yarns plied or adjacent, plus the use of various percentages of intimate blends, a whole series of color patterns and hues can be created.

By adding a third fiber such as rayon—which can be reserved or dyed any other contrasting color—it is readily evident that the color styling possibilities become truly unlimited. For example, the same fabric can contain related as well as contrasting colors. This process permits the production of what appear to be completely different fabrics from one basic greige construction.

The practical and economic aspects are particularly promising, because these myriad color effects can be accomplished by a one-bath method, and at costs comparable for dyeing 100% acetate.

## Dyeing Principles

Arnel and acetate show certain differences in dyeing behavior which can be used to give the following color effects:

1. The difference in dyeing rate between Arnel and acetate using selected disperse dyes gives a distribution favorable to the acetate and results in many tone-on-tone effects.

2. By selection of certain water soluble dyes which color the acetate and produce very little color on Arnel, marked differences in depth approaching reserve on Arnel can be achieved.

3. By the use of both disperse and water soluble dyes, even greater hue differences can be created.

4. Arnel and acetate can be union dyed with rayon or cotton in a contrasting shade to give special styling effects.

## Effect of Yarn and Fabric Construction

While many color effects can be developed by the selection of dyes and dyeing techniques, yarn and fabric constructions are even more important in producing multi-color and special fabric patterns. Indeed, suitable constructions plus application of dyeing principles described in this report can produce by piece dyeing many of the shades and color contrasts such as checks, stripes, plaids and iridescent effects achievable only by yarn dyeing. Proper constructions and suitable designs permit weaving of large quantities of greige fabrics that can be subsequently dyed to get the varied color and styling requirements of the market. Limited design and fabric construction experience permits the following helpful suggestions:

1. Where brightness of color is desired, the use of fabrics with bands of yarn of one fiber or spot weaves on plain grounds are recommended.

2. For maximum color contrasts—checks plaids and stripe effects should be used.

3. Interesting surface effects can be obtained at the intersection of yarn bands, particularly where used in conjunction with fancy weave design.

4. Designs taking advantage of face effects are particularly adaptable to this multi-color technique.

5. The judicious use of float yarns produces many variable color effects.

6. When plied yarns are used, it has been observed that unless the twist level is near zero, heather rather than clear contrast colors are produced.

7. When using yarns made of intimate blends, color contrasts often give subtle union colors related to, but not identical with, that of the individual fiber. The diversity possible by the application of this three-fiber technique to intimate blends is infinite. However, it is quite difficult to predict the shade or hue of color obtained from this variety of blends in different fabric constructions. The resulting colors and shades must in many cases be determined by trial and error.

8. In slub fabrics, this technique permits another degree of style versatility since the same fabric may contain slubs in a contrasting as well as related shade.

## Colorfastness

The colorfastness level attainable in this multi-color effect dyeing is dependent on the colorfastness of the dyes used. Washfastness at 120°F. is attainable if selected disperse dyes are used on the acetate and Arnel, and fixable dyes on the rayon. A list of such selected dyes may be obtained by writing the editors.

(Continued on Page 48)

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# how to dye Dacron Taslan cloth

Du Pont technicians have developed these procedures for finishing of lightweight fabrics.

**T**HE PROCESS FOR PRODUCING Du Pont Taslan® textured yarns is a mechanical treatment that imparts a new and unique texture to conventional textile yarns. Textured yarns made from continuous filament yarns are similar, in some respects, to both filament and spun yarns.

Taslan yarns are characterized by filament loops that protrude from the main filament bundle (Figure 1). Yarn properties can be varied by varying the size and frequency of the loops. Texturing does not alter the basic physical and chemical properties of the fiber.

Fabrics of Taslan textured Dacron® polyester fiber can be dyed and finished on various types of equipment; the choice depends on the results desired. If the fabric is processed relaxed, such as in a beck, a lofty hand is obtained. Handling under tension, such as on a jig, gives a smooth, broadcloth type of fabric.

Working a relaxed fabric brings filament loops to the fabric surface. The more loops on the surface, the softer and bulkier is the fabric hand. Processing under tension does not destroy filament loops, but only reduces the number on the fabric surface.

The fabric can also be changed by various finishing methods such as by adding chemical softeners, calendering, caustic treatments, etc.

## Scouring

Scouring procedures vary according to the amount of soil and kind of size present. Frequently, the yarn is sized and then heavily waxed to improve weaving efficiency. These materials should be removed completely to ensure level dyeing and prevent excessive yellowing during heat-setting.

If no wax is present, one of the usual scours for Dacron polyester yarns will suffice.

## Waxed Yarns

1. Prescour the goods at 100° to 120°F. for 20 minutes in a bath containing

- 1.5 gms./liter nonionic detergent
- 1.5 gms./liter sodium tripolyphosphate
- 1.5 gms./liter sodium metasilicate
- 0.044 gm./liter sodium carboxymethyl cellulose
- 4.8 gm./liter solvent such as xylene or "Varsol" (product of Esso Standard Oil Co.)

2. Make up a fresh bath containing all of the above ingredients and scour the goods at 180° to 200°F. for 30 minutes.

3. Rinse the goods until the bath is clear.

If the solvent-emulsion scour fails to remove the wax, pad the gray fabric with the straight solvent and batch the goods in a roll for ½ to 1 hour before scouring. Then scour with the above formula but omit the solvent.

This report is derived from Bulletin D-90 published by the Technical Service Section, Textile Fibers Department of the Du Pont Co., Wilmington, Del.

## Unwaxed Yarns

### Lightly soiled

1. Scour the goods at 160° to 180°F. for 15 to 20 minutes in a bath containing
  - 0.3 gm./liter Du Pont's "Duponol" RA surface active agent
  - 0.3 gm./liter tetrasodium pyrophosphate
2. Rinse the goods until the bath is clear.

### Severely soiled

1. Prescour the goods at 100° to 120°F. for 20 minutes in a bath containing
  - 1.0 to 1.5 gms./liter "Alkanol"\*\*\* HC or other suitable nonionic detergent
  - 1.0 to 1.5 gms./liter sodium tripolyphosphate
  - 1.0 to 1.5 gms./liter sodium metasilicate
  - 0.02 to 0.04 gm./liter sodium carboxymethyl cellulose
2. Make up a fresh bath of the same formula and scour the goods at 180° to 200°F. for 30 minutes more.
3. Rinse the goods until the bath is clear.

## Heat-Setting

Fabrics of Taslan textured yarns of Dacron must be heatset to obtain dimensional stability and to improve wrinkle resistance. Standard methods of heat-setting can be used: hot air, hot roll, or radiant heat.

The exact times and temperatures are determined by the available equipment, nature of the fabric, and the fabric end use. Generally, fabrics of Dacron are satisfactorily "set" in enclosed heat-setting units, in which the fabric itself is heated to 385° to 420°F. for 5 to 30 seconds.

It is important that all oils, and especially waxes, be removed before the fabric is heat-set. They can cause excessive yellowing which is difficult and sometimes impossible to remove by wet processing.

## Bleaching

If the fabric requires bleaching, the following procedure can be used:

1. Bleach at the boil for 30 to 60 minutes in a solution containing
  - 2.0 gms./liter "Textone" sodium chlorite
  - 1.7 gms./liter nitric acid
  - 5.0 gms./liter sodium nitrate
2. Drop the bath and rinse clear.
3. Treat the goods with 1 to 2% sodium bisulfite at 160°F. for 10 minutes.
4. Scour the goods at 160° to 180°F. for 30 minutes in a solution containing
  - 0.05 gm./liter Duponol\* RA
  - 0.05 gm./liter tetrasodium pyrophosphate

## Dyeing

The process for producing Taslan textured yarns is strictly mechanical; the chemical properties of the



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**MINIMIZED FINISHING** — The necessity of additional tumbling after knitting is eliminated and only steaming is required in order to achieve a soft hand.

**PATTERNS AND STRIPES** — The field is open for multi-colored style creations without the necessity of long deliveries from spinner to knitter.

Have your yarns Franklin Dyed and identify them as such. It pays.

### OTHER FIBRES

In addition to Hi-Bulk Orlon, cotton, wool and worsted yarns, we also dye the following synthetic fibres: — Orlon tow, Acrilan, Dacron,\*\* Ban-Lon,<sup>®</sup> Helanca, spun nylon, spun rayon and blends. All except Orlon tow are dyed on Franklin spring packages — the "secret" of uniform penetration and uniform shades.

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\*\* Trademark for Dupont's polyester fibre



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# Taslan Dacron Dyeing

(Continued from Page 44)

yarn are not changed in any way. Therefore, the disperse dyes that are normally used for Dacron can also be used for textured yarns. The fastness properties of the dyes are the same as they are on regular filament yarns.

The choice of dyeing equipment and dyeing method will depend on the fabric's characteristics and its end use. Beck dyeing is not as likely to leave rope marks on fabrics made from Taslan yarns as it is on similarly constructed fabrics from regular filament yarns.

## Finishing

### Calender—Caustic Treatment

To minimize the clinging tendency and to improve the hand of fabrics that contain Taslan textured yarns of Dacron, the following treatment is recommended for use immediately after heat-setting.

1. Calender the fabric at the following conditions: 10 tons pressure, 300°F., 17 yards/minute, and 1 pass for each side.
2. Make up a 3% sodium hydroxide solution (on the weight of the bath) and enter the fabric at room temperature.
3. Raise the temperature to 210° to 212°F.; hold at this temperature for 30 minutes, and drop the bath.
4. Rinse in cold water for 5 minutes, and drop the bath.
5. Rinse for 5 minutes in a cold bath containing 1 lb. glacial acetic acid to 60 gallons of water.
6. Drop the bath and rinse the fabric in cold water for 5 minutes.

### Antistatic Finishes

An antistatic finish such as obtained with "Avitex" NA or "Avitex" R or "Zelec" NE nondurable antistatic agent should be applied in the final rinse during finishing. If conditions permit, the fabric should be dried on a clip frame following rinsing.

### Palmering

After the finish has been applied and the fabric has

been dried, it should be palmered at wet width, and 35 psi steam pressure, using a medium weight blanket.

## Procedures

Three different finishing sequences are listed below, covering fabrics for dress shirts, sport shirts, and blouses. Procedure A will give a dry, crisp hand; procedure B will give a softer hand than Procedure A; procedure C gives a lush, soft hand.

### A. Dress Shirt Fabrics

1. Jig scour
2. Extract (vacuum)
3. Frame-dry (relaxed)
4. Heat-set (hot roll unit at 420°F. for 15 sec.)
5. Calender
6. Caustic boil
7. Bleach (beck)
8. Apply finish
9. Extract (vacuum)
10. Frame-dry
11. Palmer

### B. Sport Shirt Fabrics

1. Hinneken boil-off
2. Beck scour
3. Beck dye
4. Extract (vacuum)
5. Frame-dry
6. Heat-set (hot roll unit at 420°F. for 15 sec.)
7. Calender
8. Caustic boil
9. Apply finish
10. Frame-dry
11. Palmer

### C. Blouse Fabrics

1. Hinneken boil-off
2. Beck scour
3. Beck dye
4. Extract (vacuum)
5. Frame-dry (relaxed)
6. Heat-set (pin or clip frame at 400°F. for 45 sec., 3 to 4% overfeed and 1½" to 2" under width)
7. Calender
8. Caustic boil
9. Apply finish
10. Frame-dry
11. Palmer

## AATCC Reelects Linberg



George O. Linberg, vice president of Synthron, Inc., has been reelected president of the American Association of Textile Chemists and Colorists for the year 1958, it was announced recently by George P. Paine, AATCC executive secretary.

G. O. Linberg

Reelected regional vice presidents were: for the Southern region—H. Gillespie Smith, southeastern manager, dyestuffs department, American Cyanamid Co.; for New England—Ernest R. Kaswell, Fabric Research Laboratories; for Central Atlantic region—Weldon G. Helmus, Fair Lawn Finishing Co., and for the Western region—Elliott Morrill, The Best Foods Co. Mr. Morrill is general chairman of the AATCC's 1958 national convention, which will be held in Chicago in October.

## More Polyethylene Yarn

United State Rubber Co., which has been in the textile business since 1917, has become a producer of plastic yarns and will produce and sell polyethylene yarn. The new yarn will be produced at Providence, R. I. in the company's footwear and general products division plant. U. S. Rubber said it decided to enter the polyethylene yarn business because market research had convinced it that this field had tremendous potential and that there was room for another manufacturer of top quality yarns.



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# Arnel Cross-Dyeing

(Continued from Page 42)

## Applications and Types of Fabric

The more important types of fabrics where this one-bath piece dyeing technique can be successfully and economically applied are the following:

1. Gingham  
Checks  
Plaids—dresses, skirts, blouses, sportswear, household uses
2. Striped Fabrics  
Striped flannels —pajamas, outerwear  
Striped broadcloths—sportswear, dresses  
Striped poplins —sportswear, womenswear  
Multicolor stripes —dresses, blouses  
Striped seersucker —sportswear, dresses  
Colored plisses —pajamas, dresses

- Oxford stripes —sports shirts, dresses
3. Chambrays  
Dress chambrays —dresses, sportswear
4. Herringbone —suits, dresses, coats
5. Cord Fabrics —suits, sportswear
6. Tweed type fabrics —suits, dresses, light coats, skirts
7. Dotted Swiss fabrics —womenswear, household applications
8. Novelty fabrics —suiting, dresses, slubby yarn, shagbark type, spot-weave
9. Hopsacking fabrics —dresses, skirts, light coats
10. Houndstooth fabrics —dresses, skirts

A special Celanese bulletin giving more details about Arnel cross-dyeing techniques along with dye formulas and lists of recommended dyestuffs may be obtained free by writing the editors.

## New Hartford Rayon Colors

Hartford Rayon Co., manufacturers of Kolorbon heavy-denier solution-dyed rayon staple, has introduced its "Forecast for 58 Group" of colors. Hartford also announced entry into the drapery and upholstery fields on a major scale. Kolorbon's 8 and 15 deniers are reported to give it versatility in fabrics with a "hand-loomed" appearance. The new colors were developed for use individually, in combination with each other, in combinations with pre-existing colors, and in combination with other fibers.

The new colors are: larkspur blue, 45 cents a pound; lemon peel and Kelly green, 46 cents; royal blue and bitter green, 55 cents; tangerine, 58 cents and Chinese red, 59 cents. For further information write the editors.

## New Tests for Colors in Drycleaning

The Technical Committee on Research of the American Association of Textile Chemists and Colorists has adopted a more realistic method of evaluating the probable behavior of colored textiles in commercial dry cleaning. Known as Tentative Test Method No. 85-1957, it replaces Test No. 25-1952, Colorfastness to Drycleaning. Tentative Test Method No. 86-1957, for evaluating the durability of applied designs and finishes to dry cleaning, also was adopted.

The new colorfastness test utilizes the recently adopted International Geometric Gray Scale for grading color loss or fading. Staining is not evaluated as was previously required. The National Institute of Drycleaning reports the staining problem is largely controlled in commercial practice, while color fading, due to the solubility of dyes in solvent is becoming an increasingly greater problem.

The American Standards Association has requested that the new tests be submitted for use in the revised L22 standards to cover all fibers. In this connection, the Drycleaning Institute will recommend a minimum colorfastness of Class 4 on the Gray Scale based on its observations during committee investigations. For retention of applied designs and finishes, the Institute recommended a minimum of A4 for appearance and B4 for "hand." Copies of the tests may be had by writing the editors.

## Iridescent Hosiery

Dye formulations for iridescent hosiery colors have been developed in Du Pont laboratories. The new color names correspond to those shown in the U. S. Color Association's recent Fall-Winter Season Shade Card. The following formulations, for conventional hosiery dyeing methods using Duponol D paste surface active agent and trisodium phosphate (TSP), have been created:

*Blushgleam*: 0.25% Acetamine Yellow N; 0.25% Celanthrene Red Violet R.

*French Cafe*: 0.5% Acetamine Yellow N; 0.5% Celanthrene Red Violet R; 0.25% Celanthrene Violet CB.

*Paris Taupe*: 0.3% Acetamine Yellow N; 0.36% Celanthrene Red Violet R; 0.18% Celanthrene Violet CB.

*Beige Glaze*: 0.32% Acetamine Yellow N; 0.36% Celanthrene Red Violet R; 0.08% Celanthrene Violet CB.

*Sungem*: 0.15% Acetamine Yellow N; 0.15% Celanthrene Red Violet R; 0.01% Acetamine Scarlet B.

*Rose Magic*: 0.3% Acetamine Yellow N; 0.36% Celanthrene Red Violet R.

## For the DYER and FINISHER

### Nylon Dyeing Process

A procedure which permits dyeing of heat textured filament nylon free from barre effects has been developed by Sandoz, Inc. The process involves Sandonyls, a line of acid dyes especially for use

on nylon; Lyogen P, a new chemical levelling agent, and a dyeing formula applicable on all standard machines. The Sandonyl process, plus a tested group of bright shading Sulfonine dyes, with Lyogen P, will give 40-hour light fastness on most shades, according to Sandoz. Little or no increase in cost is involved in the new procedure. For further information write the editors.

### New Fatty Acid Data

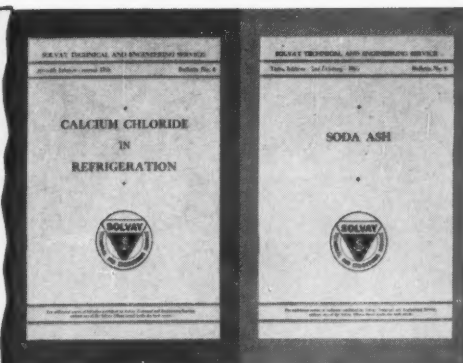
The fatty acid sales department of Emery Industries, Inc., has published a new booklet, "Specifications and Characteristics of Fatty Acids." The booklet covers Emery's complete line of fatty Hyfac hydrogenated fatty acids and glycerides, and Hyfac castor oil derivatives. For free copies write the editors.

(Continued on Page 57)



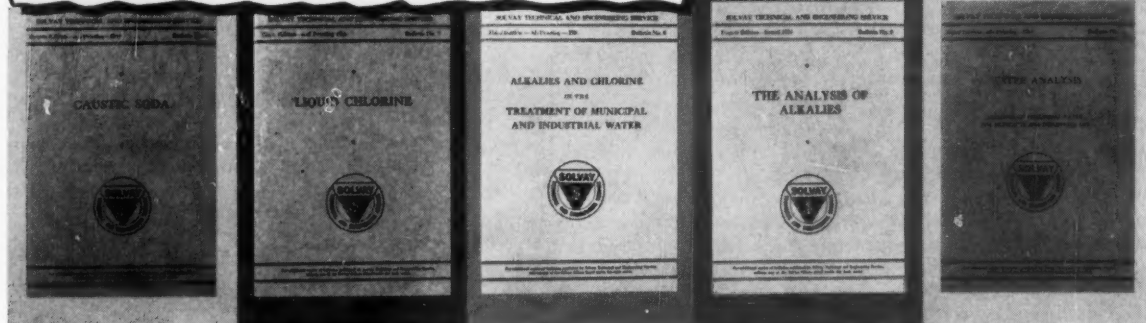
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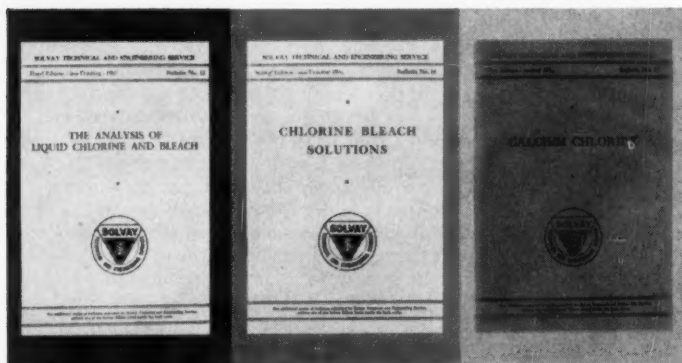
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# Stretch & Bulk Yarns

(Continued from Page 31)

The elasticity of the torque-type stretch yarns is quite similar to that of a group of untwisted coiled springs tending to return to the coiled state. The springs are fully extended by a load no greater than 0.4 gm./denier. If a single strand is thus extended, 90% recovery can occur in less than 1 minute after removal of the load.

Because the torque of such yarns is transferred to the fabric, these yarns were originally plied, one strand that had been spun clockwise being used with another that had been spun counterclockwise.

When a plied multifilament yarn is extended and the tension is then released, a recovery as high as 75% can be expected within 2 minutes. Full recovery can be secured by steaming the yarn or immersing it in boiling water. The partial recovery appears to be due, in the main, to interference and interlocking between coils of adjoining filaments. Steaming or boiling in water introduces enough lubrication and release of strain to permit additional contraction.

## Twisted Monofilaments

The analogy of springs, used above, can be applied most easily to the twisted monofilaments, each of which is similar to a highly twisted torsional spring. When two such monofilaments of opposite torque are held together, there is no opportunity for them to untwist and return to a state of lower torsion. Therefore little or no contraction occurs once the structure is completed. However, when several filaments are free to turn in the same direction, untwisting can occur when the extending force is removed, and a fabric made from them will be elastic.

The torque monofilament yarns are used in fabric construction in alternating groups or bands of at least two strands, each composed of one clockwise and one counterclockwise torque yarn. Fabrics also can be constructed according to this principle with multifilament torque stretch yarns. Such yarns are not true coil springs, however. A true coil-spring yarn would possess no torque, and none of this type has been marketed as yet.

No-torque stretch yarns include those that have been deformed by being passed, at elevated temperatures, through a stuffing box, over a sharp edge, between gears, or through a rapidly reversing false-twist spindle, and those that are deformed or crimped by being knitted into a fabric, set, and allowed to unravel. A simplification of this process involves feeding the yarn continuously into a rotating circular knitting head with heated needles, the crimped yarn being extracted continuously when it has nearly completed the circuit.

The no-torque yarns produced by the use of stuffing boxes, gears, or knitting can be represented as a series of cantilevers attached one to the other at the apex of each fold or curve. Because the motion of such series is essentially linear in extension or contraction, little or no interference is experienced between adjoining strands. Unfortunately, the extension that can be built into the yarn by this wave or fold technique seldom exceeds 85% of the contracted length. By comparison, torque yarns show as much as 300% extension of the contracted length. It is this difference in potential extension that differentiates the yarns that I consider to be true stretch yarns from the remainder of the bulk yarns.

There is, however, a group of no-torque yarns that shows adequate stretch. This group includes those produced by pulling plastic filaments over a sharp edge and those produced by introducing alternating lengths of opposite torque along the yarn. These yarns, although they appear to have no torque, are torque yarns in that they are coiled or twisted locally. It is this multidirectional coiling of the yarn that produces a collapsed bulk yarn that can be extended at least 200%. Such yarns, when in their contracted state, are easily fitted into the British description of bulked yarns quoted above.

In order to complete the category of bulked yarns, we must include those multifilament yarns typified by Taslan,\* in which loops have been formed by agitating the relaxed yarn in a high-velocity air jet. Staple-fiber yarns in this group include those that are formed by twisting conventional textile fibers together with fibers of high potential shrinkage and then activating the shrinkage.

At this point, having already dealt with history, methods, properties, and possible changes in manufacturing, I shall describe my idea of the future of these yarns.

The hollow-filament bulky fibers, primarily those of viscose, now limited in use because of their low tensile strength, may return in a new guise if and when a method of introducing gas into melt-spun and drawn fibers is developed. However, I believe that competition from fine, solid, resilient, or crimped fibers will limit the economic future of such hollow fibers.

The synthetic fibers that have high potential shrinkage already have demonstrated their usefulness in bulked yarns when, as cut staple, they are spun together into yarns with other synthetic or natural fibers. In the area of continuous-filament yarns, similar fibers have resulted in the development of a whole new group of decorative fabrics, the so-called "3D" materials. In addition, when used as components of plied yarns, these fibers have been used to develop new textures in carpet faces, knitted outerwear, and woven textiles.

## Twist or Crimp?

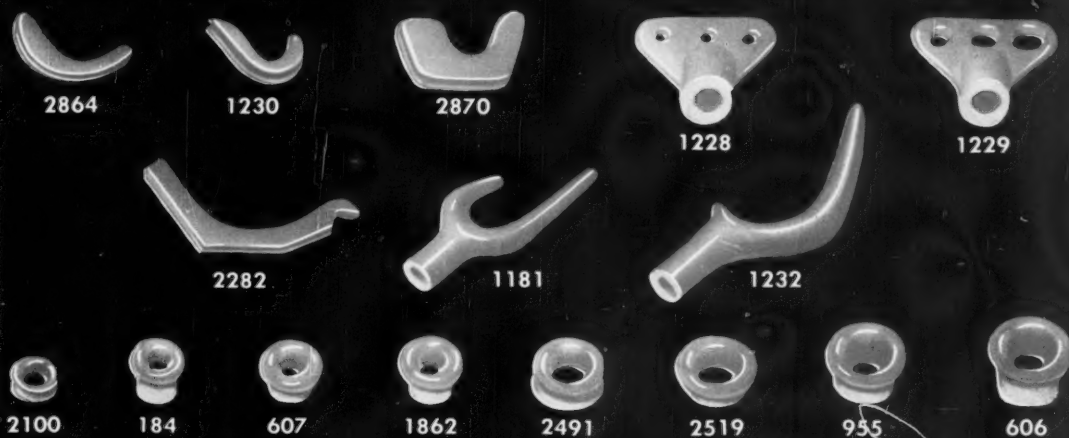
Obviously, a whole spectrum of continuous-filament torque-type bulk yarns can be produced by reducing the number of turns used to deform the yarn. For this reason alone, competition between twisting and crimping methods should be more intense in the area of bulk yarns than in that of the stretch yarns. The fact that a bulking effect can be produced in equipment usually found in textile plants, particularly those that twist filament yarns, seems to have been overlooked in the immediate past. A reduction in the range of stretch can be produced by treating stretch yarns in boiling water or by means of pressure dyeing. If desired, such bulking also can be accomplished by dry heat. It appears logical to assume that stretch torque yarns can be produced by introducing a false spindle or sharp edge between a spinneret or yarn-drafting unit and the ultimate collecting package, whether it be a spool, pirn, bobbin, or other textile support.

The possibilities of inserting the air jet or the crimper-box device into synthetic-filament producing systems are evident. Either of these arrangements should result in less handling and lower processing costs for the no-torque bulk yarns. Decisions as to when and how this will be done must, of course, remain with the manufacturers of synthetic yarn.

\* Registered trade-mark of E. I. du Pont de Nemours and Company, Inc., Wilmington, Del.

(Continued on Page 57)

# MACHINERY and EQUIPMENT SECTION



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GREENSBORO, N. C.

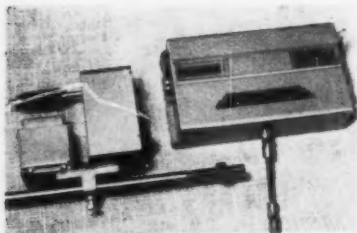


MAIN OFFICE  
AND FACTORY:  
TRENTON, N. J.



# New MACHINERY

## New EQUIPMENT



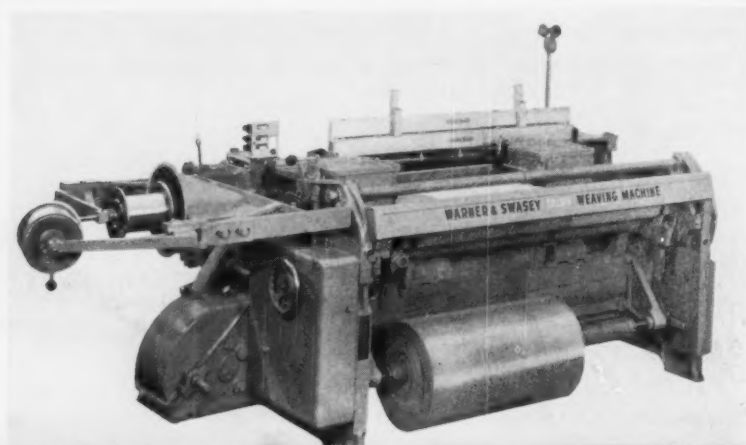
### Warp Measurer & Marker

Trumeter Co. has introduced a warp measuring and marking device which can be used on slasher sizing and beaming machines to measure and mark distinctly at predetermined lengths and in continuous process. The unit consists of Trumeter's standard batch unit coupled to a suitable roller on the sizing or beaming machine. It is coupled electrically to the marking device and automatically marks the yarn by depressing the top roller on to a second felt-covered roller which is immersed in dye. For further details write the editors.

### High-Speed Wire Weaver

Warner & Swasey has designed a new, high-speed Sulzer wire weaving machine which produces quality insect screening up to 50 inches in width at four to six times the rate of conventional equipment.

Filler wire is supplied from a standard mill bulk spool which holds 15 pounds or more of wire and thus permits a running time of two to three hours, depending upon screening width. A special detector stops the machine if a filler package run-out or a filler wire break occurs. Instead of the usual bar loom type bobbin system, the weaver uses a series of lightweight one-ounce steel shuttles. Up to 12,000 feet of .013-inch aluminum wire can be held by the machine's warp beam. Antifriction bearings are used to minimize wear. For further data write the editors.



### Lestershire Bobbins

A new catalog covering the complete line of Lestershire bobbins for use in the textile, electrical and metalworking industries has been issued by Lestershire Spool Division of National Vulcanized Fibre Co. The 12-page brochure describes and illustrates standard and special bobbins made of various materials, and the adaptability of Lestershire bobbins to specific applications. For copies write the editors.

### Low-Cost Pick Counter

Post Electronics has developed a low-cost counter (SD-1) to boost both the life and the speed



range of electro-mechanical registers (pick counters, etc.) This unit is said to be of particular interest to the textile industry since more accurate pick counts are essential in estimating per-yard cost. The SD-1 records in counts of 10 and can be equipped with a visual totalizer. For further information write the editors.



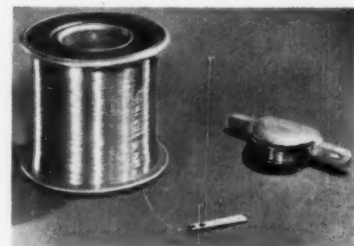
### Abrasion Testing Set

Taber Instrument Corp. has placed on the market its Model 174 abrasion testing set, consisting of a laboratory abramer and wheel refacer plus accessories and supplies. The 1958 model incorporates a built-in motor with a worm reduction drive for uniform high torque, an automatic stop electric counter and a new selector circuit. The selector circuit is said to insure counting of each abrasion cycle. The refacer has been designed to precision dress the abrading wheels of the abramer. For further information write the editors.

### Nylon Dunnage Cushions

A pneumatic dunnage nylon cushion, developed by United States Rubber Co. at the request of the Army Quartermaster Corps, is said to cut down cargo damage in rail shipments, speed up loading and unloading of box cars and replace bracing and shoring lumber in many types of shipment.

Made of weatherproof nylon with a neoprene coating on each side, the dunnage cushions are equipped with a butyl-compound bladder, similar to a tire inner tube and a large-volume diaphragm valve. Deflated, they fold into compact 6 by 15 by 24-inch cubes. Inflated cushions measure 4 by 4 by 5-feet and can be expanded from one to 10-pounds-per-square-inch.



Standard bulk package holding 15 pounds of aluminum wire and one ounce steel shuttle as compared to (right) small capacity wire supply and heavy bobbin used on conventional wire screen weaving equipment.

New, high-speed Warner & Swasey-Sulzer wire weaving machine.





## Penford Gums \*

# The Preferred Warp Sizing for All Fibers

### For Fine Combed Yarns

- increase abrasion resistance
- eliminate hard size and roll marks on warps
- give more uniform size distribution

### For Spun Rayon (Viscose)

- give excellent weaving protection
- minimize set marks, knees and imperfections
- possess easy desizing characteristics

### For Hydrophobic Fibers (Nylon, Dacron, Acrilan, Orlon, Dynel & Blends)

- are compatible with adjuncts facilitating necessary adhesion for good weaving
- reduce clinging and protruding fibers
- produce tough but flexible films

### For Worsted Fibers

- provide excellent weaving protection
- bond protruding fibers to yarn body
- do not congeal at low size box operating temperatures

Individual size formulations depend on many variables and Penick & Ford Technical Sales Service Engineers will at your request recommend formulations for individual mill requirements.

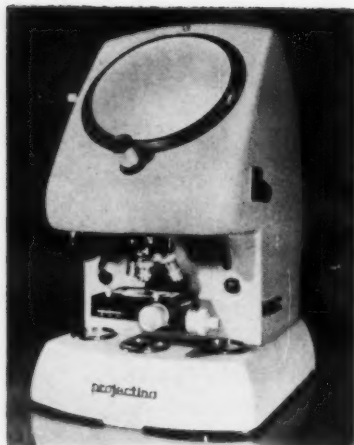
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DOUGLAS DEXTRINES • CLEARSOL GUMS FOR THE TEXTILE INDUSTRY

\* (U. S. PATENT NOS. 2,516,632; 2,516,633; 2,516,624)



### Versatile Optical Tester

Alfred Hofmann & Co. has introduced its latest Swiss optical unit, Projectina. Created for more economical inspection methods in research and quality control in various industries, including textiles, the unit combines into a portable housing—microscope, projector, comparator and camera. By fitting a simple adapter to the instrument observation face, any image previously projected on the screen in the 7x to 200x magnification range may instantly be photo-recorded, either in black and white or in color. Micro pictures may be seen on a 7-inch ground glass screen and also through the eye piece, at a constant scale. *For further information write the editors.*

### New Scott Testers Agent

Scott Testers, Inc., has appointed Scott Testers (Southern), Inc., as its representative for both sales engineering and equipment servicing for the entire southeastern area. Scott Testers (Southern) will maintain sales offices and a servicing center at Spartanburg, S. C., under the direction of John E. Hargreaves, general manager.

### Pin Drafter

Warner & Swasey has available its new wide setover M-3700 pin drafter, for handling all pin drafting needs. Wider pinning, close nip control on short staple and extreme versatility are said to make the machine highly efficient. Features include: a new single level clamp for easier operation to obtain pressure for more uniform draft control; all mechanisms located beneath the machine, visually exposing the machine head, and greater simplification of the 20-inch can coiler. The pin drafter is adaptable to various attachments and deliveries, the manufacturer reports. *For further information write the editors.*

### Knitting Stitch Meter

Supreme Knitting Machine Co.'s new Stitch-O-Meter improvements include a 4½-inch square full view calibrated meter and a smooth aluminum front panel. In addition to an easy-to-read dial, the meter may now be calibrated at three points for effective use on fast running, normal speed and slow-running machines.

The machine is currently being used in mills to set the stitch cams precisely and eliminate streaks in the cloth of stationary yarn rack circular knitting machines. *For further information write the editors.*

### Improved Drafting Apron

A new improved design for drafting aprons has been developed by Dayton Rubber Co. Initial production of aprons of the new design is being confined to the D-60 or larger sizes to accommodate users of drafting systems not employing fixed centers who have been requesting an apron design to minimize chatter, reduce waste collection and improve the action of the apron over the nose bar. *For further information write the editors.*

### Inside Selvage Unit

Textile Machine Works has designed a special inside selvage attachment for intarsia on the standard Reading full-fashioned outerwear machine. Patterns can now be knitted embodying various split arrangements, such as single-needle open and two-needle closed split. Perfect interlocking of loops is maintained by repositioning the selvage ends of the design yarns after the course is laid and while the actual loop formation takes place. *For further information write the editors.*

### Low-Cost Dry Mill

A new reciprocating continuous dry mill has been developed by James Hunter Machine Co. When placed in line with a carbonizing range, the mill can be operated by the carbonizer crew, thus saving on labor costs. Cloth is introduced and removed from the machine by two sets of nip rolls, running at the same rate as the carbonizer dryer. It is crushed between two sets of rolls which pass the cloth in alternating directions. Two scays inside the machine hold the cloth while it is being reversed. The mill requires about the same space as that occupied by a batch dry crusher. *For further information write the editors.*

### New Industrial Tape

Minnesota Mining and Manufacturing Co. has developed a general purpose industrial tape said to be resistant to moisture and many acids, alkalis and solvents. Called "Scotch" brand "Paklon" film tape No. 681, it has long aging properties due to dimensional stability of the film backing. Caliper of the new tape, which is printable, is 2.6 mils, with a tensile strength of 25 to 35 pounds per inch of width. *For further information write the editor.*

### V-Belt Drive Booklet

A new V-Belt drive manual, containing all V-drive information previously available in the company's full-line D-56 General Engineering Catalog, has been published by the Dodge Manufacturing Corp. Descriptive material is illustrated with product and installation photographs, plus expanded tables. Engineering drawings and exploded views are used throughout the bulletin, which is indexed for convenient reference. *For free copies write the editors.*

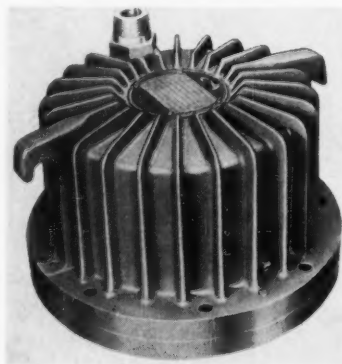
### More Unifils Bought

Universal Winding Co. reports an initial purchase of Unifil loom winders has been made by Marven Looms, Inc., of West Warwick, R. I. Jesse W. Stribling, Universal sales manager, said Marven is the second Rhode Island mill to order Unifil winders.

### Immersible Motor

A new immersible motor for submerged operations has been announced by The Louis Allis Co. Designed for close-coupling to agitators or pumps in chemicals, water and abrasive industrial oils, the unit is of leak-tight construction, has neoprene breathers and corrosion resistant parts. It is available in ratings of ¾ to 40 HP, both single and polyphase. *For further information write the editors.*

Immersible Motor





England

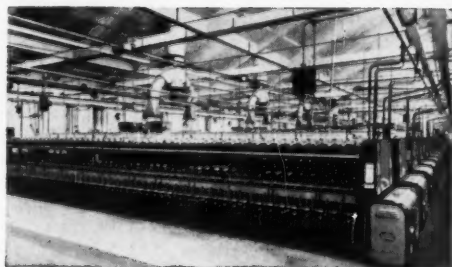
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## Cone Mills

(Continued from Page 33)

As further indication of the big change at Cone, Hood points out that six years ago the sample book for Cone work-leisure fabrics had one line of twills—perhaps 14 or 15 swatches in all. For spring, 1958, the same sample book has 29 distinct lines of twills and similar carded outerwear cloths, each in a range of bright colors that would have astonished an old line twill and drill salesman of a decade ago.

The same story of rapid movement in the direction of more colors, more patterns and more style is told by Dwight Davis, vice president who supervises sales of printed flannels for the men's shirting trade. Today his department is able to offer about 850 color combinations in shirt patterns as well as a large number of solid colors. A few years ago only 200 patterns were offered.

In corduroys, one of Cone's most important fabrics, the picture is also one of rapid movement from profitless thickset staples into pace-setting styling and finer pinwale constructions to win new markets in a wide range of fashion applications. Harvey Raymond, Cone's vice president in charge of corduroy merchandising, describes what has happened to his specialty as "a revolution."

### Corduroy Goes Feminine

Cone, the biggest producer of corduroys in the United States, started the upheaval a few years back by introducing fine pinwale corduroys that were guaranteed machine washable. Aptly tradenamed "washcord prints" these soft, silky fabrics lent themselves amazingly well to a virtually endless variety of printed patterns for the whole range of women's and children's wear from sport slacks to smart party dresses. Cone went to a great deal of trouble to coordinate the prints with solid colored goods for smart apparel combinations. The result was a boom in pinwale corduroys in women's apparel, creating a market for other corduroy producers as well as Cone.

The task of elevating corduroys, long associated with work garments and the more rugged species of men's sportswear, into a fabric of fashion required a big investment by Cone not only in weaving plants but in the crucial function of printing and finishing. Cone's own research laboratory, vice president Sydney Cone points out, developed new techniques for finishing the new kind of light weight corduroys while Cone's own engineers designed new machinery for doing the finishing work in the plants that Cone re-equipped for the purpose.

### Emphasis on Styling and Quality

Thus in five or six years of rapid change has Cone Mills, one of the mastodons of American textiles, developed new instincts and new organs for profitable survival in the changed, more hectic textile climate of today and the future. Cone will continue, of course, to be a gigantic multi-plant and multi-product operation. It will continue to be devoted, as in its impressively successful past, to the manufacture of astronomical yardages of medium priced goods to provide the fabrics for increasing millions of medium-income Americans.

But the present trend at Cone points toward greater emphasis in the future on styling, and greater empha-

sis on the high quality for which the company is already justly famous. This way of doing business means smaller individual orders, quicker deliveries, a steady flow of new constructions, new colors, new style effects in all Cone lines from denims right along to the company's recent venture into fine Paris-created prints. It means a larger sales force, substantially increased sales costs and, all in all, a more strenuous life for all concerned.

### Cone Has Many Good Men

For the exacting demands of this more rugged climate of doing business, Cone Mills impresses an observer as being well equipped in key manpower. Among the Cones, in addition to Ceasar and Sydney, there is Clarence Cone, vice president in charge of manufacturing, whose mastery of denim production has earned him the title of "Mr. Denim" throughout the textile South. There is Louis Heflin, who as president of Cone Mills Inc., the New York sales organization, heads up the big and complicated job of finding customers for Cone fabrics.

These leaders are reinforced by a group of younger men who have come to the fore in recent years in Cone's manufacturing and merchandising operations. These are men like Percy Gregory, the vice president who runs Cone's big, brand new finishing plant at Carlisle, S. C., and the famous Union Bleachery in Greenville. There are also such men as Bob Shaw, in charge of merchandising denims, calm, enormously competent Ed Holt, dynamic Harvey Raymond and affable Tom Hood. In spite of the fact that most of these men are well under 50, they are all seasoned textile veterans who have, in most cases, been with Cone for two or more decades.

### The Problem of Finding Markets

To find markets for the tremendous yardages that must of necessity pour from Cone looms and Cone finishing plants if Cone is to survive and make money is not an easy task for these men. But it is one that has its rewards—rewards not measurable in money entirely. Harvey Raymond tells how impressed by the styling and quality of Cone fabrics was Andre Delas, the French designer who works for Cone in Paris, supplying it with a stream of advanced print designs. Delas could hardly believe that goods of the quality and smartness he saw in Cone's New York showrooms could be made to sell for 40 and 50 and 60 cents a yard. They were superior, he confessed, to anything that European mills could turn out even at twice the price. To know that you are helping to give American men and women fabrics of this kind is an important part of the incentives that spur Cone and other American textile executives to work harder and harder.

### Switches to Nylon Tires

Dugan Brothers of New Jersey, Inc., a home delivery and wholesale bakery, expects to have its entire fleet of 1,700 vehicles on nylon cord tires within two years, according to Du Pont's Product Information Service. Dugan Brothers began replacing rayon cord tires with nylon casings six years ago. About 60% of its rolling stock is now so equipped. Nylon tires are specified for all new vehicles. Dugan spokesmen are quoted as saying that nylon cord tires average about 16,000 miles on the original tread and can be retreaded an average of three times.



## Stretch & Bulk Yarns

(Continued from Page 50)

The high-stretch yarns are now used widely in men's socks, are becoming important in women's hosiery, and are also being used in all other fabrics of knitted construction. The fact that torque stretch yarns need not be plied, but can be used in opposite torque in alternate picks, ends, feeds, or courses, has permitted the development of stretch fabrics much lighter in weight than has been possible previously. The fact that stretch fabrics conform to curved shapes, such as furniture, makes them useful in upholstery covers. The same property has resulted in exciting sweaters, neat-fitting undergarments, and comfortable belts, suspenders, girdles, and similar elastic accessories. The appearance of a stretch bathing-suit fabric opens a still wider horizon.

The intermediate group of synthetic torque and no-torque bulk yarns with limited stretch is, in my opinion, the one most likely to compete successfully in fabrics designed for the retention of tailored shape. These yarns have a resilience comparable to those of wool, a moisture-holding capacity equal to those of cotton, a strength approaching that of untreated yarns of the same composition, and the built-in ability to return to their original shape after having been stretched. The technical difficulties involved in weaving these yarns are being solved rapidly. These yarns may be used either alone or in combination with other synthetic and natural fibers.

I can easily imagine, in these yarns, the Cashlon flannel slacks and the Newlon shirt of the hero of Shepherd Mead's *The Big Ball of Wax*. However, we shall not be forced to wait a generation to see them. In fact, we should have such shape-retaining fabrics within the next three years.

## For the DYER and FINISHER

(Continued from Page 48)

### Mildew-Proofing Treatment

The Permchem treatment, a new process said to render canvas and greige goods completely mildew-proof, has been announced by Ohio Falls, Inc. In addition, the fabric is made impervious to mold, fungi, germs and even odors. The Permchem process is said not to affect colors in any way. *For further information write the editors.*

### Mothproofing Wool Blends

The susceptibility of blends of wool and man-made fibers to attack by moths and other pests was discussed by Donald J. Ott, entomologist of the Geigy Chemical Corp., at a recent meeting of the New York Section, American Association of Textile Chemists and Colorists. Resistance of textiles to three types of pests—webbing clothes moth, black carpet beetle and the furniture carpet beetle—were compared in fabric weight loss tests.

According to Ott, the greatest damage occurred with all three pests on wool blends with 10 to 40% nylon. With some of these blends the damage exceeded that obtained with 100% woolen fabric.

Tests with untreated and Mitintreated blends of wool and various man-made fibers indicate that the untreated blends vary in susceptibility. In the order of increasing susceptibility to damage they can be listed as follows: Dacron, Orlon, nylon, regenerated cellulose and regenerated protein fibers. *For further information, write the editors.*

### Sandoz Second Grey Dye

Sandoz, Inc., has added a second grey direct dye, Lumicrease/Cuprox Grey 3LR Pat., to its line of Lumicrease colors. Fastness to light, water and perspiration are exceptional, according to Sandoz, and ratings after treatment with U. F. resin, Cuprox or Sandofix are high. The new dye is said to be well suited for application in dye padding. *For further information write the editors.*

### Celersel Distributor

Metro-Atlantic, Inc., has been appointed sole distributor in this country for Celersel, a patented accelerator and dye-bath assistant for use in the dyeing of wool and other animal fibers. Celersel is reported to have undergone intensive tests in woolen and worsted dyehouses. It permits application of chrome dyestuffs in far less time than is necessary with conventional dyeing methods. Dyeings obtained with the Celersel process are said to have the same fastness properties as those produced by the usual methods. *For further information write the editors.*

### New Geigy Acrylic Blue

Geigy Dyestuffs, division of Geigy Chemical Corp., has added a second blue to its new line of dyestuffs developed for DuPont Orlon and other acrylic fibers. Designated Maxilon Blue RLA, the new color is somewhat redder in shade than the recently announced GLA, when compared in natural light but much redder in artificial light. The company recommends that the second blue be applied with the use of an anionic retarding agent to achieve the best leveling. *For further information write the editors.*

### Anti-Static Finish

Lyman Printing & Finishing Co., a division of M. Lowenstein & Sons, has been appointed a licensee for Aston anti-static finish developed by Onyx Oil & Chemical Co. Onyx reports that all types of man-made fiber fabrics can now be made static-free where necessary, such as in surgical operating rooms and where industrial work involves explosive or flammable gases or liquids. Aston, described as a polymeric electrolyte, is said to provide fibers with a polymer jacket that helps maintain an invisible moisture-absorptive film on cloth, and dispels the static charge. *For further information write the editors.*

### 'Do-It-Yourself' Dyeing

American Aniline Products, a unit of the Chemical Division, Koppers Co., Inc., has developed a new "Sani-Vat" dye kit. The "do-it-yourself" kit will now permit hospitals, hotels and other institutions to add color easily and economically to their linens, napery and other institutional fabrics. The four-step dyeing operation can be completed in a little over an hour. The dye and dye assistants in each kit are individually packaged in polyethylene film bags. *For further information write the editors.*



"Sani-Vat" Dye Kit



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## NEW FABRICS

## NEW YARNS

### Burlington Blended Yarns

Two new blended yarns have been brought out by Burlington Yarn Sales Co. The first, tradenamed Wonderspun, is a cotton and synthetic blend for use for both knitted and woven fabrics, with brilliant colors when dyed. The second, Syn-Spun, a synthetic and cotton colored blend yarn, is available in 10 basic heather tones. According to Burlington, Syn-Spun, is colorfast and will not crock or fade. For further information write the editors.

### Lofted Hand Knitting Yarn

A new novelty knitting yarn of blended lofted Eastman acetate and textured nylon will appear this spring in a group of hand knit fashions made by Bernhard Ulmann Co. Called "Glance" the new yarn is priced at 79 cents a skein, retail. Ulmann is said to have selected lofted acetate because it offers hand knitters a soft hand, good dimensional stability, good shape retention, and immunity to moths and mildew. Garments knitted from this yarn are said to be light weight, crease and crush resistant, completely washable, fast drying, and require no steam blocking or pressing. For further information write the editors.

### Leakproof Diaper Cover

Thomas Textile Co., Inc., has acquired exclusive patent rights to the "Boater," described as the completely leakproof infants, diaper cover, originally introduced by Keko Products. Made of waterproofed nylon, the Boater requires only a quick warm water rinse to be fresh and new. The diaper cover will retail at \$1.69. For further information write the editors.

### New Lofted Glass Yarn

Owens-Corning Fiberglas Corp. has introduced a new yarn, Fiberglas Aerocor, said to give curtains and draperies made of glass the feel and appearance of natural fiber fabrics. The yarn is produced by a process whereby a strand or group of fibers can be "bulked up" under concentrated air pressure.

In developing the yarn, Owens-Corning worked closely with three major weavers of glass yarns—J. P. Stevens, Hess-Goldsmith and United Merchants & Manufacturers, all Taslan process licensees. Fiberglas Aerocor yarn is reported to be fire safe; washable with no ironing; resistant to stretch, shrink, mildew and sun-rot and mothproof. For further information write the editors.

### First Avisco Integrity Drapery Fabrics

Waverly Fabrics has brought out a new group of screen printed fabrics designed specifically in Avisco fibers by Ralph Nestor. The new line of six patterns is imprinted on the selvage with the line, "An Avisco Integrity Fabric by Waverly," the first time a drapery fabric has been so identified and marking the extension to this field of the Avisco Integrity program. For further information write the editors.

### Nylon-Dacron Baby Bunting

Shelley Knitting Mills is now producing a lightweight, machine washable "Wunderwear" three-piece combination bunting and snow suit, said to keep a baby warm even in the coldest weather. The bottom portion of the snow suit-bunting combination and the jacket are made with 100% virgin Du Pont Dacron Fiberfil as insulation, with a woven nylon fabric shell and embroidered trim. The combination weighs less than three ounces, and drip dries within a few minutes, according to Shelley. For further information write the editors.



### Gray Goods Inventories Are Low

Burlington Industries reported recently that its inventories of man-made fiber gray goods were at the lowest level in years. A company spokesman is also reported to have said that its man-made fiber weaving mills were operating at a rate of five days a week or less.

In December, Edmon G. Luke, president of Amerotron Corp., publicly pledged that his company would continue during 1958 to operate its looms weaving man-made fiber gray goods no more than 5 days, or 120 hours each week. He stated that the 120-hour week at Amerotron had "brought stability and undeniable benefits to the converter, cutter and retailer", and had provided, at the mill level, "a continuity of operation without production cutbacks and periodic layoffs."

### "Wash-and-Wear" Clarification Urged

New interest in clarifying the meaning of the

term, "wash-and-wear", was provided last month at the annual meeting of the National Association of Finishers of Textile Fabrics. In his talk as retiring president of the group, J. Marshall Cole of Cold Spring Bleachery, Yardley, Pa., said that it was ready to push a cooperative program on wash-and-wear terminology and criteria during the year ahead. Lawrence Marx, Jr., vice president of Clearwater Finishing Co., Clearwater, S. C., was elected president to succeed Mr. Cole.

### Suit Over Design Ownership Started

A suit has been filed in the Supreme Court in New York City by Avila Fabrics, Inc., against Haddad Brothers to enjoin the latter from using a "Living Flowers" fabric print design owned by Avila. Avila charges that Haddad entered into a conspiracy with a converter, Levine & Co., Inc., and a printer, Loma Art Textile Co., Inc., to copy the design without Avila's permission. An accounting of profits is also asked by Avila.

### Bulked Solution-Dyed Acetate Rugs

Aldon has announced its new "Loch Lomond" line of 16 pre-cut rugs made of Celanese bulked solution-dyed acetate yarn in an unusual tweed texture. This yarn, now entering the rug and carpet field for the first time, is reported to have been specially designed to increase construction strength and give lasting color to contemporary styles. The bulked fiber, which differs from both filament and staple, produces a rug surface with good resilience and fullness according to Celanese. Backed with jute and latex, the pre-cut rugs are easy to clean and are resistant to soil, moths, insects and mildew. Initial sales of the bulked yarn will be in Aldon rugs. *For further information write the editors.*

### Men's Wear Orlon Use

Orlon acrylic fiber is expected to get a good show of the largest fiber consumption market, men's and boys' clothing, in the Fall of 1958, according to the Du Pont Product Information Service. Twenty-eight major fabric suppliers plan production of men's wear

fall weight fabrics of Du Pont Orlon acrylic fiber and wool in both worsted and woolen types, as compared with five mills which produced this blend in 1957. Some of these fabrics will contain as much as 70 to 80% Orlon, thus satisfying the growing demand for lighter weight clothing.

### Auto Use of Coloray

Use of Coloray, the solution-dyed rayon staple fiber produced by Courtaulds (Alabama), Inc., in automotive upholstery is increasing, according to the firm. Represented in three car models in the 1955 line, Coloray is being used in 20 models of the Big Three auto producers in 1958. Chrysler Corp. is using Coloray fabrics in five models, Ford Motor Co. in six, and General Motors in nine. Solution-dyed rayon staple fiber, according to Courtaulds, supplies the type of color constancy which autos require in upholstery fabrics. Coloray also makes possible uniformity in coloration and lends itself to countless combinations with other fibers, Courtaulds points out.

### New Morningstar Products

Morningstar, Nicol, Inc., has placed on the market two new products—Solvitose C5, a textile print thickener, and Emocithin, a water-in-oil emulsifier. Solvitose C5, a cold-water-soluble product resulting in high color yield and readily removable from fabric without enzyme treatment, is said

to do away completely with cooking kettles. The thickener can be used for both machine and screen printing with vats, Indigosols and Rapidogens but is not suitable for dyestuffs requiring chromium or aluminum salts for fixation.

Emocithin, developed by W. A. Scholten's Chemische Fabrieken, produces W/O emulsions which

will not separate at temperatures up to 200 degrees F. (per ASTM steam emulsion test D 157-36). Its ability to form fine dispersions, according to Morningstar, Nicol, makes it ideal for dispersing dyes in cosmetics and pigments in paints, where it will counteract pigment settling. *For further information write the editors.*

## Mill Tests

(Continued from Page 34)

The tripping of the lever must be done immediately upon the filling of the pan, so that there will be adequate time for it to refill within the regular feeding cycle. Otherwise, light roping will occur.

### Evaluation

Note the average and range of the four weighings, and check against standards established for the particular blend being processed.

### WOOLEN CARD JACKSPool WEIGHT VARIATION

#### Purpose

In order to assure that the individual cheeses on jacks pools do not vary excessively across the card, it is important to test the jacks pools occasionally.

#### Equipment

Grain scale or quadrant. Special jacks pools with detachable heads.

#### Sampling

Check one complete spool from each of the four banks of the card.

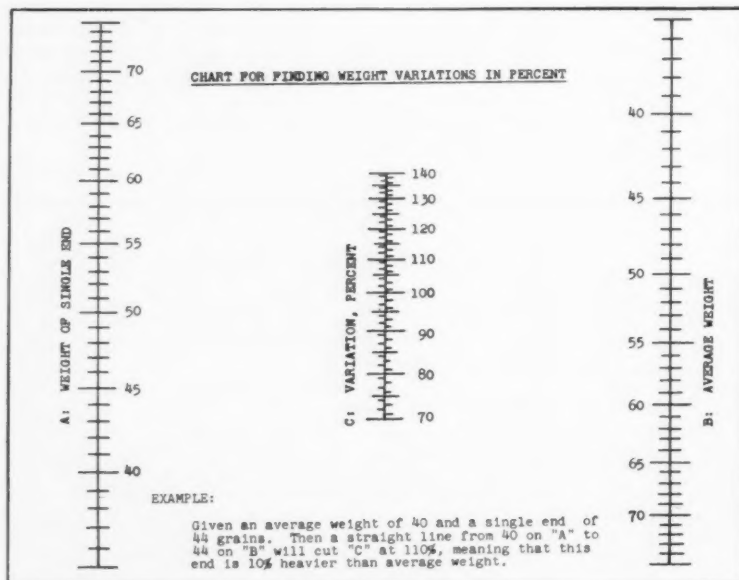


Fig. 35

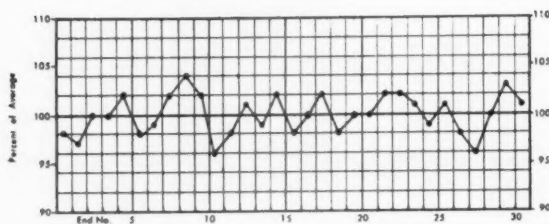
#### Procedure

1. Insert empty jackspool and permit to run until a layer of approximately 3 inches of roping has been produced.

### New Industrial Garments

A new line of polyvinyl chloride-impregnated industrial clothing, including garments, gloves and aprons, is described in three bulletins issued by Jomac Inc. The PVC-protected items are said to have light weight, unusual flexibility and resistance to chemicals, oils and abrasion. The bulletins describe and illustrate each type of product, plus individual features, range of sizes, styles and colors. For free copies of the bulletins write the editors.

Card No. 1



Card No. 2

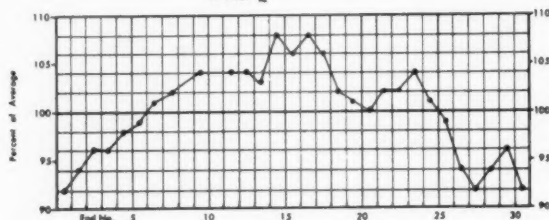


Fig. 34

It is seen at a glance that Card No. 1 shows a range of variation within limits normally expected. On the other hand, Card No. 2 is not operating properly, as evidenced by the light ends 1 to 6 and 25 to 30, and the heavy ends in the center of the card.

2. Note and discard any cheeses containing end breaks.
3. Weigh all other cheeses to the nearest grain.
4. Record the results.

#### Evaluation:

1. Express each grain weight as a percentage of the spool average. Graph the results, as illustrated in Fig. 34.
2. As shown by the illustration, the pattern of variation revealed by the graph may either fall within normal expectation or else may show up faulty speeds, settings or other faults.

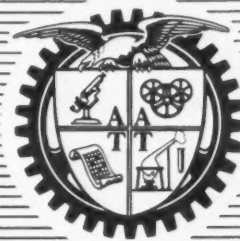
Mills not having automatic calculators in their laboratory will find the nomographic chart in Figure 35 a time saving means for determining percentage variations without need for calculations.

### Colored Metallic Staple

Metallic staple in colors, in addition to gold and silver, will soon be marketed by Dobeckmun Co., a division of Dow Chemical Co. Dobeckmun also had added six new pastel colors to its Lurex metallic yarns, bringing the total number of colors to 32. The staple is being made in widths from 1/64-inch to as fine as 1/200-inch. The yarn ranges from 1/32-inch to 1/128-inch. The company has launched a two-year promotional program on color in metallics.



# PAPERS OF THE AMERICAN ASSOCIATION FOR TEXTILE TECHNOLOGY INC.®



## AATT

# 1957 textile research achievements

By J. B. Goldberg

**T**HE RECORD of textile industry profits is not as bright as it was a year ago, but a review of research accomplishments indicates no lack of activity and no lag in progress. Analysis would probably disclose a close relationship between continuing support of well-directed research by some forward-thinking textile companies and profitable operations. Over a period of years those organizations which regard research as an investment rather than an expenditure appear to be among the leaders in earnings.

## FIBERS & YARNS

### Natural Fibers

As is to be expected, progress in improving the natural fibers themselves is extremely slow, even though their best friends will admit that there is room for improvement. For cotton research alone, the U. S. Dept. of Agriculture Research and Marketing Advisory Committee recommended no less than 150 research projects, many of them directed at basic studies as well as fiber processing. At the Beltwide Cotton Production Conference in Tennessee last month the government was asked to quadruple cotton research expenditure in 1958 to \$72 million.

So soon after the beginning of a new year, no comment is necessary on the title of an article discussing the harmful effects on cotton which appeared in one of our textile journals last February—"Gins Cause Much of Our Trouble". The results of treating cotton fabrics with acrylamide were described in a report published in the Textile Research Journal. A British patent disclosed how cotton strength and wear value could be improved by steeping in selected water-soluble amines.

High elongation in cordage fiber was accomplished through caustic and methacrylate chromic chloride treatment, according to a patent issued in April to Fabric Research Laboratories. Fully acetylated cotton, declared to be superior to earlier developed partially acetylated cotton, was announced as a promising modification under investigation at the Southern Regional Research Laboratory and improved heat endur-

ance of cotton was reported to have been achieved by a treatment with dicyandiamide. Preliminary observations of the effects of nuclear irradiations on cotton yarn showed increased affinity for basic dyes and reduced affinity for direct dyes.

To supplement a short supply of ramie fiber rather than to add flavor, manufacturers in South Rhodesia have been experimenting with the use of 30% banana fiber in the manufacture of bags normally made of all jute. Chinese scientists were said to be evaluating a new wild plant fiber superior in strength and fineness to flax, cotton, ramie and wool and available in large quantities.

Research on wool continued to be directed toward studies of fiber properties and means of improving them. Several types of ionizing radiation appeared to offer no hope of effecting useful alterations such as new cross-links. Chemical treatments, however, including wool's solubility in hot acid and alkali and its susceptibility to attack by several other chemicals.

While the antidote for a shrinking wool market has not yet been created, shrinkproofing processes continued to occupy the efforts of a number of scientists. One technique originating at the U. S. D. A. Western

Mr. Goldberg, the well-known consultant to the textile and allied industries, collects material for this annual review over the entire preceding 12 months. A graduate of Massachusetts Institute of Technology, Mr. Goldberg was for many years research director of J. P. Stevens & Co. He resigned in 1953 to become a consultant. He is a fellow of the Textile Institute, and an active member of many technical organizations. He is the author of the book "Fabric Defects" and publishes "Texttracts", a monthly summary of textile news.



J. B. Goldberg

Paper presented at January 8th meeting.

Regional Research Laboratory involved use of a mixture of polyamide and epoxy resins, and a Mount Vernon, N. Y. company suggested treatment with a thio-lactone compound. An Australian scientific journal reported on the effectiveness of a gelatin application hardened with formaldehyde in reducing felting.

Apparently sulphur and molasses is more than an old New England cure for what ails you. At the University of Illinois Agriculture Dept., following a more basic approach to wool shrinkage control, it was shown that the feeding of raw sulphur to sheep reduced shrinkage problems, and, at the same time, improved the wool's strength and chemical resistance. To insure healthy teeth to resist abrasive action of fine river silt and facilitate good eating necessary to produce fine wool, Australian farm experts state that fluoride-treated water is of great benefit. Dieldrin, a chlorinated hydrocarbon moth-proofing agent, resistant to dry-cleaning and washing, was to have been made available to the trade by the Shell Chemical Corp. last fall.

Permanent breaking of wool fiber cystine linkages permit setting, according to details of an investigation published last August. More recently the Australian Commonwealth Scientific and Industrial Research Organization announced development of a method of imparting permanent creases or pleats to wool fabrics by a simple chemical application before steam pressing. Promising to overcome one of the failings often cited by proponents of less vulnerable man-made fibers, a method for protecting wool from yellowing was revealed in a Dept. of Agriculture patent calling for soaking in an aqueous solution of dibutyl butane phosphorate.

Just to be contrary, Australian scientists are credited with the discovery that the fleece of purebred merino sheep by mutation is a lustrous yellow and possesses felting properties superior to those of any other wool. Probably resentful of the progress of man-made fibers in "fur-like" fabrics, a breeder of Lincoln lambs in that same country reported that wool from this source had been used in South America to make "imitation mink".

### Man-Made Fibers

The producers of man-made fibers showed little evidence of retrenching in their research efforts to create new products and improve existing ones. Still not ready for large-scale mill evaluation, Union Carbide Corp. was said to be experimenting with small lots of continuous filament acrylic yarn. Although the only corn protein fiber in the United States, Vicara, was rumored to be on the verge of discontinuing operations, the possibility of another part of the corn, starch, yielding a new fiber was suggested in a research investigation originating at Purdue University.

Metallic yarns continued to be popular. In March Reynolds Metals Co. offered permanent crimp metallic staple. In December Dobeckmun disclosed plans to manufacture metallic staple in colors in addition to gold and silver. Details of a synthetic linear polyester fiber from lignin were presented at an American Chemical Society meeting by Rayonier Corp. scientists. Du Pont nylon innovations during the past year included a high tenacity yarn, sold at a slight premium and said to possess improved resistance to degradation by sunlight and heat; a new Type 700 tire yarn, and a special staple modified to make it more compatible with cotton in blends. The addition of only



**CRIMPED AND COLORED**—Colored metallic staple fiber, such as this sample, was introduced last year by the Dobeckmun Co.

25% of this nylon staple, identified as Type 420, was found to contribute increased strength, tear-resistance and wear-life, of particular interest in work clothing.

Also offered by Du Pont later in the year was a full dull luster nylon carpet staple yielding tone-on-tone tweed effects in carpeting with a single dyeing operation, at the same time imparting a greater degree of soil-resistance. American Enka Co. added to their line of nylon products 6 and 15 denier carpet staple and 10 and 20 denier yarns containing two filaments each.

In addition to its regular white rayon carpet staple, American Viscose Corp. started output of solution-dyed 15-denier staple. Directed at uses in fabrics where strength superior to cotton is desired, "Avisco XL" high tenacity staple in finer deniers was test-marketed in limited quantities. A few weeks ago "Avicron" was heralded as the new American Viscose filament yarn engineered for textured carpets. This yarn develops a durable crimp which is activated in normal wet finishing operations. Availability of a whiter Acrilan fiber, particularly desirable for knitted outerwear garments and blankets, was announced by Chemstrand Corp. early last year. Chemstrand also developed a special acrylic fiber for making synthetic fiber paper on conventional papermaking machinery.

Courtaulds (Ala) Inc. added a number of new colors to their existing range of "Coloray" rayon staple and also announced plans to manufacture crimped carpet fiber. A few months ago a novel continuous filament yarn with color applied at irregular intervals was introduced by American Bemberg. Commercial quantities of "Ondule", a new Du Pont random slub filament rayon in 450 and 2200 denier sizes was expected to be ready later this year. Cognizant of the growing threat of nylon in the tire cord field, several producers brought forth improved high strength yarns of rayon, this old-timer among man-made yarns still retaining a substantial lead over nylon and boasting again of accounting for almost 100% of all the original tires on new passenger cars.

Additions to the old family of acetate yarns and fibers were Eastman's high-bulk lofted yarn in a new 360 denier multifilament size and their No. 35 smooth-surface curled filament cross-section heavy denier yarns for carpets. There were also Y-shaped cross-section filament acetate yarns by both Celanese and Du Pont. Other new acetate items were Celanese "Type

K" staple for pillows and comforter filling, and "HC" high-crimp heat-settable fiber for carpeting. Firestone Plastics Co. made available a new low-pressure polyethylene Velon yarn with superior abrasion and moisture resistance and flex life. Also, just a few weeks ago U. S. Rubber Co. announced plans to manufacture polyethylene yarn.

Foreign producers of man-made fibers appeared to be equally as prolific as American manufacturers. New cellulosic yarns included a filament boucle rayon yarn; a 12-denier crimped rayon carpet staple; a "Super White" acetate and fluorescent solution-dyed acetate, all made by Courtaulds, Ltd. A modified "Fibrolane" protein fiber was claimed to be poisonous to moths and carpet beetles to such a degree that only 20% of this fiber in blends with wool gave protection against attack by those destructive agents.

In Japan a synthetic fiber was said to have been developed from polyurea. Kurashiki Rayon Co. stated that they had succeeded in making their "Vinyon" polyvinyl alcohol fiber more like wool and suitable for acid dyeing. A German producer designed a high-speed melt-spinning process for acetate. Although Hercules Powder Company acquired the U. S. patent rights, no plans were revealed for using this process in America.

A subsidiary of the German Glanzstoff Co. started production of high tenacity "Duraflax", combining high abrasion resistance with a low swelling factor. Also of German origin was a nylon 6 type staple said to be "fully absorbent". Berkshire Knitting Mills signed up as a producer of hosiery from this yarn in the United States. The manufacture of acrylic fibers in foreign countries appeared to be gaining momentum, with several Japanese and one Italian concern reported to have arranged for licensing with American companies.

In addition to manufacturing what appear to be conventional polyamide fibers, Russian chemists invented one new synthetic fiber, "Ftorlon" containing fluorine and featuring exceptionally high resistance to nitric and phosphoric acids, hydrogen peroxide and sodium hydroxide and another, "Vinitron," based on what was described as a chlorine resin and nitrocellulose. "Luvsan" was identified as a Russian polyester fiber and "Onanth" as an improved type of nylon.

Said to be suitable for replacing wool, two new fibers made from albumin were produced experimentally in Hungary. One, "Erilan" was being made in Poland, the other, "Gizolan", made from albumin and cellulose, was described as an "artificial silk with a woolen character." Although they are still far from large-scale production, fibers from polypropylene, first publicized last year, continued to receive widespread attention and comments in this country and abroad. Most interesting was the prediction that such fibers might one day be the lowest priced of all man-made products, although it was admitted that the problems of dyeing, degradation by oxidation and comparatively low heat resistance were still to be overcome. Last month samples of "Moplen" Italian-made polypropylene fiber were exhibited in New York, with claims made of a tenacity of 5.7 grams per denier for the filament yarn. After years of experimentation, a glass fiber yarn bulked by the Taslan process was brought out by Owens-Corning. Identified as "Aerocor," it was seen in curtain and drapery fabrics.

Among the more interesting patents issued during the past year were one assigned to a Japanese inven-

tor for producing hollow filaments of regenerated cellulose and another to a Japanese rayon company for making cellulose acetate fibers by acetylating cellulose fibers. A British patent disclosed a method for improving the abrasion resistance of synthetic fibers by incorporating in the spinning solution an aerogel of a metal oxide. Johns Manville Corp. received a patent in August covering thermal modification of acrylonitrile filaments by coating them with a dispersion of fine silica prior to a heat treatment of about 300°F. American Viscose Corp. was credited with inventing a composite yarn with random disposition of two compositions throughout the cross-section and rayon fibers of reduced water sensitivity. Means for improving abrasion resistance of glass fibers and forming a yarn by fusing fiber bundles with resins and a lubricant was patented by Owens-Corning Fiberglas Corp. A few weeks ago a patent issued to the Du Pont Co. described the production of staple of melt-spun synthetics said to be pill-resistant.

## MANUFACTURING METHODS AND EQUIPMENT

### Fiber and Yarn Processing

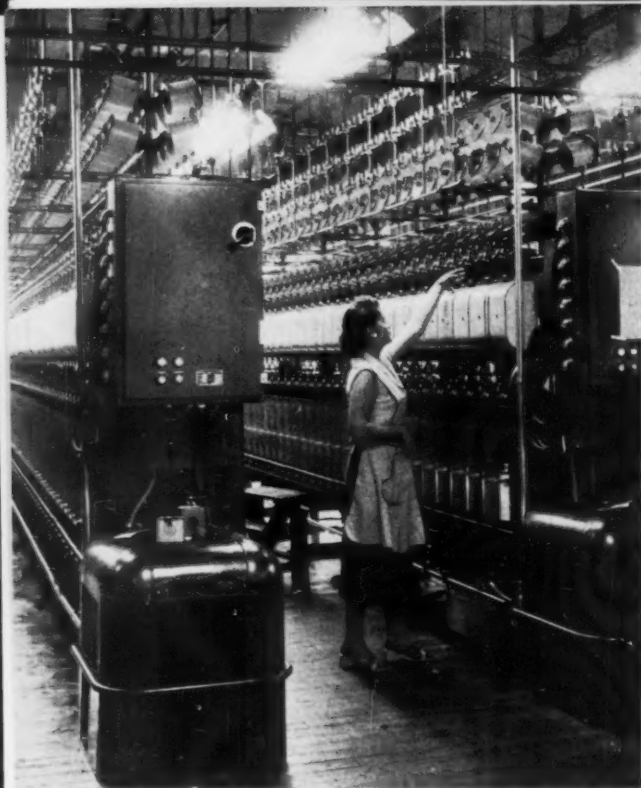
Just a year ago, details were published of an automatic take-off device in use at a North Carolina mill, replacing the reciprocating doffer comb and resulting in a marked improvement in silver evenness. The cotton opener-cleaner developed at the U. S. D. A. Southern Regional Research Laboratory to operate at high efficiency and reduced lint loss was described at the National Cotton Council Research Clinic in February and is now available for license on a royalty-free basis. Also presented at that same conference was a report on the benefits of metallic card clothing, data indicating significant reduction in neps, waste, yarn imperfections, and card clothing cost per year.

Preliminary study by North Carolina State College Textile School investigators of the effects of high doffer speeds also gave promise of a reduction in card neps. Research workers at the Budapest, Hungary Technical University confirmed earlier findings reported from the same American school on a study of the influence of reduced card flat speeds. A similar study directed at determining the effect of speed on flat strip weights, neps and mean fiber length was recorded in a German publication. Sold by a North Carolina agent, a new Swedish card clothing featured oval-shaped wire. By clothing the flats in a special two-strip fashion it was said that neps were reduced to a marked degree.

A new high-speed doffer comb introduced by a Boston engineering company utilized the principle of mechanical resonance to provide for faster removal of web. A reduction in sliver stretch while being drawn from the doffer into the can was achieved by a plastic roller mounted on a simple bracket secured to the card coiler head.

Description of an experimental sliver evenner mechanism for roving frames was given in the July issue of Textile Research Journal. A new drafting element designed by a Georgia company consists of a top roll with straight and rigid shaft, and independently revolving cots. Withstanding heavy loads





**STRETCH INTO BULK**—These Universal Model 10 ringtwisters in the mill of Concordia Manufacturing Co., Central Falls, R. I. are equipped with Universal's new Model 511 attachment for post-treating false twist stretch yarns to give them a wide range of bulking effects.

the new element was said to have proven most efficient in over a year's operations on 52 spinning frames. Saco-Lowell introduced the "Twinstrand" two-slayer package for their "Versa-Matic" drawing frame, supplying two spindles, with a new coiling system allowing sliver withdrawal without entanglement.

An 80% reduction in card waste was made possible by the "Turbaire" cleaner device which replaces lick-in cover and controls air currents to give more efficient cleaning. A unique spinning device utilizing an air conveying system for the fibers was the subject of a Virginia inventor's patent issued in October. Increased yields from various blends, improved yarn quality, higher production and reduced labor and waste were claims made for a new English fettling device consisting of a steel cleaning roller applied to each of the swifts and doffers in the set of a wool card. Also of English origin, the Platt Bros. "Versatex" draft unit permitted the efficient drafting of short fibers present among longer ones over a range of from 2 $\frac{3}{8}$ " to 8".

Shown at the Swiss textile machinery fair were a slubbing frame with a 12" lift for large packages and with high spindle velocities possible; a cotton ring spinning frame for packages up to 12"; and a yarn spinning frame equipped with a false twist tube drafting arrangement with ball bearing top rollers and a thread suction unit. A Dutch electronic slub catcher was claimed to operate at 99% efficiency at winding speeds of 200 to 1200 yards per minute as compared with 10-15% efficiency provided by conventional mechanical devices. A patented process for spinning without flyers disclosed in a German

publication depends on feeding a twistless sliver to the rollers of a vertical drafting system on the spinning machine.

Evidence of growing interest in modified continuous filament yarns was apparent by the number of new process developments recorded during the past 12 months. Universal Winding Company introduced a new method for post-treating false-twisted yarns to give a bulking effect and christened the resultant yarns as "Saaba". Another post-treatment technique, involving heating crimped yarns to produce a modified bulk or stretch yarn, was announced by Deering Milliken Research Corp. last summer. U. S. Textile Machine Co. offered a new 60-spindle machine for the manufacture of "Taslan" textured yarn. Hartford Spinning Co. revealed plans to license its patented crimping method utilizing the name of "Spunized" to identify the processed yarns. Featured is the ability to handle 400 ends of filament yarn at one time with setting achieved in large batches after crimping.

In March, Du Pont received a patent covering the now well-known "Taslan" yarns. Several months later patents on methods for bulking yarns with air-jet techniques were issued to American Enka and Eastman Kodak Co. A new type of multi-processed textured nylon yarn, of particular interest to manufacturers of tufted carpeting, was described by a representative of the National Aniline Div. of the Allied Chemical & Dye Corporation at last December's meeting of the American Association for Textile Technology (For full text see MTM Dec. '57).

North American Rayon Corp. received a patent on a unique false twist spindle incorporating a coupling block with a vertical base through which the yarn passes. This device is said to eliminate the uneven tensions encountered with roller spindles.

The rewards of basic research are not necessarily confined to the particular fibers with which a mill may be concerned. Proof of this is to be found in the part that the highly successful process for making "Ban-Lon" textured yarns was originally conceived in the research division of Alexander Smith Carpet Co. It is interesting to observe that another crimping apparatus was designed by engineers of the Uxbridge Worsted Corp. and patented in June.

Our foreign friends in textile research have also been active in the invention of means for modifying filament yarns. The English Shirley Institute reported production of a non-torque singles yarn on conventional false twist machinery, permitting the making of sheerer and softer hosiery. Use is anticipated in the knitting of feet of fine denier sheer stretch hosiery for women. Also in England, the Ernest Scragg "Crimp Spin 3" machine for crimping yarns featured great flexibility. It was said to be capable of operating in six different ways. Early in the year Courtaulds, Ltd. announced development of their own "Courtolon" nylon yarn crimping process. Details of an installation of a vertical high-speed false-twist spinning machine for producing Helanca yarns, operating at speeds at 90,000 r.p.m. first appeared in an English journal last May. The Dutch Enka company obtained a British patent on what was described as a method for treating filament yarns by air jet bulking to resemble spun staple yarn.

### **Warping, Slashing, Knitting and Weaving**

An improved method for sizing nylon and Dacron eliminating the need for over-waxing such yarns was



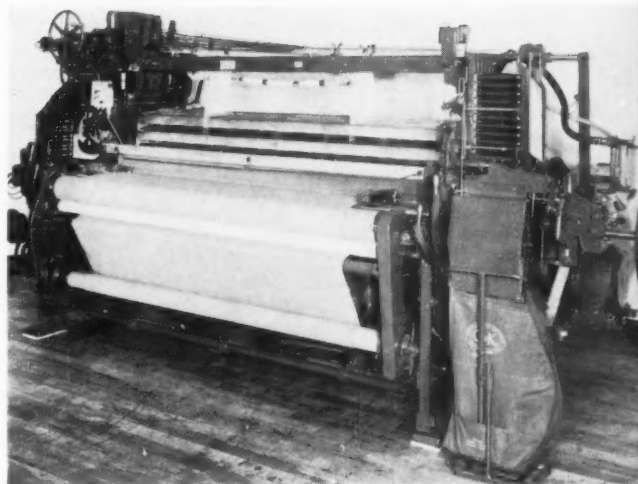
devised by incorporating in water-soluble polymers sizing and lubrication in one step. A novel Japanese high-speed warping-slasher promised to consume less labor and floor space. The ends are gathered in sheet form and are guided through a tensioning arrangement and special leasing reed, then passed through the size box and dried on five steam-heated cylinders of two-foot diameter.

To provide scientific control of shuttle flight and check it with a minimum of wear, H. F. Livermore Corp. "Strate-Line" shuttle control binder is perfectly flat and applies gradual pressure on the shuttle entering the box. Representative of contributions frequently made by fiber producers is the simple attachment designed by American Viscose Textile Research Department for the S-6 loom to apply a bonding agent to rayon scrim during weaving. Among original devices created by research workers at our textile schools were a number from Clemson College including an off-center gear drive for looms; a warp knitting machine using thread guides instead of needles; a 2-for-1 twister; a clip-type loom temple which eliminates bowing; a constant tension warp let-off; and a single and two-pick energy storage pick-motion.

Crompton & Knowles new W-3 pick-and-pick automatic or "Papa" loom offered a wider number of box-loom pattern possibilities. The new loom eliminates lost time for replenishing filling; affords better blending with less filling waste because of smaller bunches of bobbins, and drastically reduces drag-ins. "Shooting" filling into a cloth by a guided missile might be a reality if commercial development results from an American Viscose patent which describes means for driving a shuttle across the warp by firing charges of dynamite or nitrocellulose grains regularly spaced on a tape fed to a firing chamber at the side of the loom. A principle by which it may be possible to provide a driving force to an object completely disconnected from the electrical supply and in effect producing a two-way shuttle motion, inserting filling yarn by a "floating" carrier was discussed in a British publication early last year. An electromechanical pick-motion permits wide loom operation with less speed variation by dialing to change the voltage applied to the clutch magnet.

Said to be the widest weaving loom in the United States, the German Astra Model UF loom with an overall width of 70 feet was installed in a plant in Ohio for weaving papermakers' felt and other high density fabrics.

English-made developments included the Argus warp stop motion said to virtually eliminate broken and slack ends; an improved "Microsatin" finish



**PAPA KNOWS BEST**—Crompton & Knowles new W-3 pick-and-pick automatic loom—"papa" for short—introduced last year is said to offer a wider number of box loom pattern possibilities.

temple barrel reducing friction with the cloth; and the Meiners "Loom-Lite" to direct light through the reed and into the heddles and aid weavers in drawing in or mending broken ends. Also of English origin was a patented device to modify circular knitting machines, altering present methods to knit the heel, toe and foot sections faster and at lower costs.

An unidentified New Yorker was credited with inventing a loom to embroider tufted products and velveteen at 500 stitches per minute, using a coded tape to control operations. For production of a new Persian-lamb like fabric, "Dynacurl", a New Jersey firm utilized a modified Schiffli embroidery machine, starting with a heavy spun Dynel yarn twisted around a core of a 3 ply cotton to form a chenille yarn  $\frac{1}{2}$ " in diameter. The yarn was curled by a special technique.

An English plastic manufacturer released details of a method for making a bonded carpet at high speed by feeding stock-dyed pile yarn from cheeses and forming loops which were fixed on one side by polyvinyl chloride. A Norwegian inventor patented means for making another type of carpet by bonding yarn to a backing by latex. An English publication carried a description of a high-speed convertible carpet loom suitable for weaving, as a wire loom, hair-cord brussels, fine plains and jacquard designs; or, as a face-to-face loom, anything woven on existing plain and jacquard types.



**FOR TASLAN YARNS**—The U. S. Textile Machine Co., Scranton, Pa., offers this 60 spindle Acme machine for texturizing filament yarns by the Du Pont Taslan process.

So-called "shuttleless" looms and other unorthodox weaving machines continued to appear on the horizon and arouse considerable interest. The Italian Waltex weaving machine, disclaiming identity as either a loom or knitting machine, became available in England. This device draws yarns of any type from bobbins, board or creel, interlocking them to form fabrics of a looped structure, resembling knitted structures but said to possess more stability. Filling selection is by dobby type cams; pegs and picks are varied by altering warp tensions.

Capable of weaving double cloth at 360 picks per minute in a 64" reed space, the British "Tumack" shuttleless loom was described as one in which filling is carried by two spears, each inserting two picks at a time in separate sheds, with large supply packages at each side of the loom. Originally run on jute fabrics only, it was expected to be designed to weave cotton as well. Disclosed in a patent issued in November, a new Draper shuttleless loom depends on the use of steel tapes wound on two wheels on either side of the loom for insertion of the picks.

Seen at the 1957 Knitting Arts Exhibition were a number of new interlock sweater machines increasing feeds from 24 to 32; improved patterned sock and hosiery knitters, and several novel inspection and packaging devices.

## FINISHED GOODS

### Dyeing and Finishing

In addition to several hundred new chemicals and coloring materials placed on the market last year, a number of novel methods and machines were introduced for wet processing of textiles. The Solvay Division of Allied Chemical & Dye Corp. announced a new activated hydrogen peroxide pre-bleaching process yielding high brightness, absorbency and dyeability at substantial savings. The Becco ultra-rapid peroxide method was perfected for open-width bleaching of heavy goods. A U. S. patent issued to Imperial Chemical Industries, Ltd., disclosed details of a multi-stage process for solvent dewaxing of cotton goods; desizing and partially bleaching by passing the goods through an alkaline solution of a desizing peroxygen bleaching compound; then developing a full bleach by steaming.

The German-made "Reactor" machine was introduced for the continuous desizing of cloth in open width, the 4 to 6 second dwell time permitting cloth speeds up to 180,000 yards in 24 hours. An improved bleaching method for Orlon suggested by Du Pont entailed use of an acid scour combined with application of a blue tint and a fluorescent white dye at the boil. Last October, the Wool Bureau published results of laboratory experiments conducted in Australia leading to better techniques for carbonizing of wool stock to prevent excessive fiber strength loss, and to increase yield.

Indicative of the continued alertness of American companies to utilize foreign as well as domestic developments was the report of the installation by a New Jersey finisher of the Swedish Svetma pad-roll open-width bleaching and dyeing range. This equipment was reputed to provide improved bleaching with sodium chloride and to be suitable for desizing as well as continuous dyeing at low temperatures with the fabric heated by infrared to give superior production rates. The third of a series of papers on the physical

properties of chemically modified cotton released by the Southern Utilization Research & Development Division of the U. S. D. A. described results of mercerization studies.

### Acrilan Progress

Published reports showed relatively few outstanding new dyeing techniques originating in the United States. The successful use of naphthol and sulphur dyestuffs for Acrilan, and a new screen print method for use of fabrics containing this fiber were announced by Chemstrand, and a unique process for the pattern dyeing of tufted carpets with vat colors in the development stage last summer was just patented. Also offered by the research division of Chemstrand was a dyeing method for Acrilan-wool blends, relying on dye-cation complexes to permit solid shade dyeing in times similar to those for 100% wool. Union Carbide's Textile Fibers Department announced means for obtaining colorfast union shades on blends of Dynel with wool, fur and silk by use of a new carrier. Apparently similar to the "Procion" dyestuffs of the I. C. I. was the line of "Cibracon" dyestuffs by the Ciba Co. superior fastness properties being imparted to cellulosic fibers by forming a permanent chemical bond. Geigy "Maxilon" basic dyes were claimed to be chemically distinctive and to provide extremely good light fastness with good penetration of acrylic fibers.

Printing without starch by utilizing an inexpensive hydrocarbon solvent, emulsifying agent, stabilizer, alkali carbonate and sodium formaldehyde sulfoxylate was claimed to cost less while yielding superior color values and brighter shades, according to a published article which described an American Cyanamid Co. system. The American method for high-temperature, high-speed dyeing of cellulosic, polyester and acrylic fibers with an organic liquid carrier was revealed in a British patent issued early in the year. Employing the "thermal shock" principle to control the pilling of Dacron blend fabrics by heat-setting at high temperatures for short exposure times, the "RH" Heatsetter uses radiant heat applied to both sides of the fabric with temperatures from 400° to 425°F. reached within 1 to 4 seconds. A multipurpose machine, said to be suitable for mills that do not have full-time need for shrinkproofing, was introduced by Riggs and Lombard, to serve as a scouring unit, continuous washer, carbonizer and a shrinkproofing machine. Means for stabilizing cellulosic fabrics by exposing them to organo silicon halide vapors, then tensioning and drying was covered by the patent of a Massachusetts inventor.

### Polyester Dyeing Progress

Imperial Chemical Industries, Ltd. published details of a process for high temperature dyeing of azoic blacks on Terylene polyester materials, claiming savings in time, dyestuffs and auxiliaries while imparting good crock-resistance. The same company introduced a series of "Nylomine" water-soluble dyestuffs for dyeing nylon in bright shades.

The German Badische Anilin Co. reported on a patented method for yielding streak-free medium and dark dyeings on nylon, with possibilities indicated for the dyeing of Dacron without use of a carrier. A British patent assigned to Courtaulds, Ltd. covered a dyeing process in which molten urea was used. More information was released on the British Rayon Research Association's fluid bed process for dyeing

textiles, with additional applications noted for heat-setting nylon tire cord fabrics, drying latex-backed tufted carpeting and singeing spun nylon. The world's first commercial model was installed at the plant of the British Tufting Machinery Co.

The use of induced electrical currents passing through fabric during scouring or dyeing was featured in an English dyeing machine with advantages of rapid wetting out, thorough penetration and level dyeing at speeds of 10 yards per minute on nylon and 20 yards per minute on rayon. The foreign-born "Celersel" process for wool dyeing was distributed in this country by Metro-Atlantic, Inc. The method employs a chemical additive providing increased rapidity of dye absorption and a reduction in the amount of heat during dyeing. These features tend to prevent degrading of the wool and to increase its loftiness. The Australian Commonwealth Scientific and Industrial Research Organization contributed an improved technique for the vigoureux printing of wool, decreasing time needed for dye fixation and increasing color depth.

### Automatic Screen Printers

Exhibited at the Swiss Fair were a fully automatic printing machine in which screens are drawn down out of a magazine and lowered into position on a rubber coated cylinder over which the fabric is stretched. Also shown was an Austrian automatic screen printer utilizing a lacquered bronze belt serving as a runner over adjustable printing tables. The Swiss Heberlein Co. received a British patent on means for depositing vaporized metals on fabrics to yield permanent fine embossed effects. Dyeing and finishing machinery shown at the Hanover Fair in Germany included a continuous sodium chlorite bleaching plant; high temperature dyeing machines; electrostatic plate flocking equipment and improved skein dyers.

The popularity of "wash-wear" cotton goods brought on a number of new finishes, boasting of freedom from harmful chlorine retention, including "Chlordare", "Keetide", "CMI" and "Eponite 100". One converter reported the successful application of a nylon finish to cotton to give it a soft lustrous appearance and minimum ironing characteristics. Another converter appeared to recognize the importance of an element other than performance by offering perfumed resin-finished cottons. The more functional inhibition of odors in textiles was promised by a new durable purifying agent announced by American Cyanamid Co. research workers last March. (For a full report on this new process, see MODERN TEXTILE MAGAZINE, April, 1957, page 82.)

### Odor Absorption Studied

The study of odor absorption of fabrics was the subject of a research project undertaken by the American Society of Heating and Air-conditioning Engineers. A Du Pont aluminum base finish to give water-repellent, stain-resistant effects on wool, rayon and synthetics was said to be undergoing evaluation tests by a number of mills and finishing plants last fall.

A surface saponification technique for making Arnel triacetate fabrics static-resistant was developed by Celanese. (For a full report see MODERN TEXTILES MAGAZINE, August, 1957, page 42). A new finish tradenamed "Fabulized" introduced a few months ago by Fabulized, Inc., of Philadelphia is said to give



IT'S FURRY UNDER FOOT—Scatter rugs resembling bear skins but made of man-made fibers, Acrilan and Dynel, were introduced last year by Aldon Rug Mills. The rugs are washable and fire-resistant.

a high degree of moisture absorbency to nylon and other synthetic fibers which normally lack that property. (For a full report see MODERN TEXTILES MAGAZINE, November, 1957, page 54.)

Increased cover and fabric opacity were achieved on nylon tricot by use of a Schreiner calendar, according to reports by Du Pont technicians. (For a complete report on this process, see MODERN TEXTILES MAGAZINE, March, 1957, page 72.) In Switzerland iridescent rainbow effects were obtained on 15 denier tricot, also nylon, by spray printed patterns.

In England, the Bradford Dyers Association announced a new finish which afforded increased serviceability by combating the causes of premature fabric failure in temperate and tropical climates; also announced was an ingenious method of producing designs on nylon and Terylene fabrics by disorientation of the fiber molecules by applying heat and pressure before dyeing. Apparently determined to give the customer whatever fabric characteristic he desires, another English company introduced a finish for Terylene or nylon fabric to yield a durable "silk-like" or "cottonized" hand. Still another boasted of his ability to make an all-cotton cloth with the appearance of wild silk. A method for printing circular knitted fabrics was offered to the trade by an English concern with claims of simple operations and moderate printing costs, but limited to three-color patterns.

### New Developments in Fabrics

Improved high pile "fur-like" fabrics of synthetic fibers helped to retain consumer interest last year. One of these, identified as Candalon "Wink", presents a subtle striping effect achieved through the incorporation of dark coarse filaments to simulate



the guard hairs of animal fur in the base fabric of lighter colored and finer denier synthetic fibers, while a woven-in "break" provides the appearance of the breaks seen in the pelt-joinings of real fur.

Although the process was patented over a year ago, details were published last May of the chemical modification of common cheese cloth to produce a soluble cotton fabric used as a backing in Schiffli laces. The cotton is altered by cyanoethylation; then treated with a chromic acid solution, followed by an oxalic acid bath to stop the oxidation reaction. After embroidering, the finished backing fabric is readily soluble in 8% caustic soda, leaving the lace.

### Embossed Fabrics, New Rugs

In the field of pile fabrics, an unusual method for producing an embossed appearance was patented by Mohasco Industries. A thermoplastic powder is first distributed through the pile of a sewn tufted fabric which is then pressed under a heated embossing roller to depress and bind portions of the pile, yielding carved effects. Designed for glamor, the Aluminum Co. of America exhibited a rug comprised of 30 shades of aluminum metallic yarns. Better suited for luxurious barefoot walking, fur-like scatter rugs of knitted spun acrylic fiber yarns appeared as a modern version of the old-fashioned bear rugs once used as a photographic background for bare infants.

British Celanese, Ltd. was credited with the invention of a means for coating short cellulose acetate fibers with a water-suspension of very fine silica particles, then electrodepositing them on an adhesive coated fabric to form a pile. Courtaulds, Ltd. of England suggested the use of their "Courlose" sodium carboxymethyl cellulose as a carpet backing, claiming good adhesive properties and no wicking of the size to prevent the pile from opening. Two other British companies collaborated in marketing a carpet underlay which incorporated an electric heating element between two layers of felt to maintain a room temperature of 57°F. to 63°F.

### "Spot-Welded" Fabrics

Another development of English origin was a light-weight, wind and water-proof cold weather cloth, "Gannex", based on a construction with "built-in air channels" obtained by "spot-welding" filling to an outer fabric layer, leaving open spaces where the air is trapped. Exceptional ventilating properties were claimed as well as shape-retention with insulating benefits retained even when exposed to heavy rain. Duplan of Canada introduced a Terylene fabric combined with silicone rubber to make an improved hospital sheeting, said to have excellent chemical and heat-resistance, durability, seam strength and comfort, readily sterilized by steam autoclaving.

A full-fashioned stocking with a non-bulky, substantially invisible seam to give the seamless look was obtained by knitting a panel with a removable thread, according to a patent assigned to Chadborn-Gotham, Inc. in September. To eliminate wrinkles in hosiery worn with medium and low-heeled shoes, one hosiery maker offered nylons with a right-angle foot construction. To bar hosiery runs a Missouri inventor incorporated a vinyl chloride-vinyl acetate yarn knit and bonded to the nylon.

New outlets for nylon were seen in the use of plastic-covered fabric "sausage skin" containers to

tote oil by sea in bags; for relining valuable paintings and eliminate deterioration encountered with linen; and in webbing cargo net to stretch across highways as a road barrier to halt speeding cars racing from pursuing officers of the law.

### Keeping a Cool Head

To help golfers keep a cool head, an aluminized nylon fabric was produced as golf cap material by Minnesota Mining & Manufacturing Co. not unlike the heat-reflective aluminum coated fabrics developed a few years ago to protect industrial workers and fire-fighters. A new type of reinforced felt with the romantic name of "Heartfelt" was introduced by the Felters Co. for use in light weight apparel. This material differs from conventional felt in that it has a woven nylon net center with wool and rayon fibers felted to both sides.

Glass fibers, usually identified with curtain, drapery and industrial fabrics, were utilized in a tie lining backing to impart crush-proofing properties. Research workers at the University of Pittsburgh reported glass fabrics already developed to withstand temperatures up to 2,305°F. with work under way to make them resist temperatures above 5,000°F.

Multi-color combinations of Arnel blends were announced as a new development of the Celanese Corp; single dyebath processing resulting in a variety of design patterns in fabrics composed of acetate, Arnel, rayon and cotton. "Bondyne" woven fabric of rayon with 30% or more of Dynel in the filling was proclaimed by Greenwood Mills as a fabric "for neater wear—easier care", providing crease-retention across the filling, but specifically not promoted as a "wash-wear" apparel fabric. (For a full report, see MODERN TEXTILES MAGAZINE, December, 1957, page 58.)

### Paper Fabrics in New Uses

Last summer, announcement was made of plans to produce a high-strength laminated material called "Papertex", combining a light-weight woven nylon fabric with acrylic resins. It was suggested that this tearproof, non-combustible product was suited for rainwear, ski-jackets, upholstery backing, photographic, map and document papers. Originally designed to replace cotton as covering for ham, a knitted paper yarn, "Pap-O-Net" made by a Dallas, Texas corporation, was elevated to more distinguished service by being fabricated into a variety of fabrics for men's sport jackets, curtains, draperies and summer handbags. Kimberly Clark's non-woven "K-2000" of 1956 acquired the name of "Kaycel" last year and was offered by one work-clothing manufacturer for various types of disposable garments, including aprons, coveralls and lab coats.

Another paper manufacturer, Scott Paper Co., was reported to be exploring potential disposable garment markets for their "Duraweave", a laminate of a filament scrim yarn with two or more plies of a high wet-strength paper. And still another manufacturer, Cincinnati Industries, was said to have made experimental suits of "X-Crepe" resin-treated multidirectional stretch kraft paper. The Moscow Radio was reported to have broadcast word of use of glued seams in clothing to eliminate sewing operations.

High-strength, flame-resistant non-woven fabric in thicknesses as low as 1/1000" was said to be in the development stage about a year ago. "Perma-Loft" non-woven nylon batting was a new product



of the Star Woolen Co. A non-woven fleece was made abroad by a German machine which consolidated cross-laid webs of any desired weight by chain-stitching. The same technique permitted production of a new type of felt when small amounts of wool were used for outer layers. Chemical foams, primarily of the polyurethane type, were produced in commercial quantities last year with their use as garment interlinings offering a threat to the market for bats of various natural and man-made fibers normally used as insulation in certain outerwear. A novel patent for the production of a fabric designed to provide protection against harmful radiation entailed treatment with a water-repellent, fire retardant and lead salt solution.

### Testing Methods and Equipment

Several new and improved techniques for fiber testing were described during the past 12 months. A Boston concern introduced the Electronic Fiber Finesness Indicator, a desk-size unit for scanning wool fibers. The British Rayon Research Association developed a new Vibrascope type instrument for the measurement of fiber deniers in the range of from 0.40 to 450 denier. Discussed at the Textile Session of the Gordon Research Conferences last summer was a single fiber testing technique, and also the relationship of fiber flexing characteristics to abrasion resistance. Design and construction details of an electronic device to measure comparative luster values of yarns were published in the *American Dyestuff Reporter* a few months ago with data presented on a study of the effects of titanium dioxide on continuous filament yarn luster. The Tennessee Eastman Co. research laboratories and the Du Pont Textile Fibers Dept. issued communications which gave details of techniques for study of fiber surfaces by use of flattened shadow replicas and the preparation of aluminum replicas.

### Measuring Twist

Two instruments for making twist measurements in yarns were developed abroad. One, of Swiss origin, was designed to find the optimum twist in spun yarns without making costly spinning trials. The other, a product of the British Hosiery and Allied Trades Research Association, was an optical device to determine twist in nylon monofilament yarns.

Tensitron, Inc. offered a tension meter with an electrical contacting device to flash a warning light if tensions fall below or exceed limits of best running conditions. The Dutch *Enka & Breda Rayon Revue* carried a description of a new, simply designed tensiometer said to have a high degree of accuracy with small size and shape permitting use in places of difficult access.

Fabric wear-testing and correlation of performance in use to laboratory observations continued to occupy the attention of technicians in this country and abroad. Progress reports were issued on further wear test data obtained with the Accelerator, there being some indication of good reproducible findings on wool and wool-blend fabrics. A new abrasion machine which utilizes a cork padded revolving steel cylinder to hold the sample to be abraded was described in the August *Textile Research Journal*. Details of an instrument for the measurement of carpet thickness during wear appeared in the British *Journal of the Textile Institute* in the following month. Du Pont reported develop-

ment of a method to predict fuzzing and pilling tendency of carpeting by tumbling in an unheated home type clothes dryer along with strips and balls of fabric which serve to abrade the samples. Claims were made for good correlation with actual floor use.

### Measuring Wrinkles

Aware of the danger of consumer reaction against widely publicized fabrics which failed to perform as advertised, converters and technicians showed signs of recognizing that the term "less care" was not a wise slogan for the producer. A special committee of the American Association of Textile Chemists & Colorists engaged in a study of evaluation techniques for judging the performance of wash-wear fabrics, giving consideration to use of a photoelectric unit to rate the degree of wrinkling. The "Fabricometer" an electronic device originally developed for the Dan River Mills to measure wrinkle-recovery, was reported to be ready for commercial distribution.

The analysis of fibers, yarns and fabrics for various characteristics was facilitated by the introduction of new instruments and test methods. Designed primarily for the organic chemist, the Infracord Double Beam Spectrophotometer was offered as a low-cost device to check raw material impurities with rapidity. A micro-fusion technique based on melting point was applied to dyed and undyed, bright and dull filament and staple synthetic fibers as a rapid and positive method for their identification. An improved rapid test for identification of various types of resin finishes entails acid hydrolysis and sodium hydroxide treatment to liberate ammonia. Means devised for study of soil removal found to be satisfactory in the ranking of washing machine efficiency utilized a zirconyl phosphate soil precipitated in cotton fabrics.

The measurement of dimensional changes in circular and warp knit goods after laundering was reported to be reliably determined through use of a new gauge marketed by U. S. Testing Co. The Research & Development Command of the Q. M. Research Center designed a "Fabric Burn Hole Tester" to determine resistance to heat of fabrics and plastics. Commercial production of the unit was undertaken by Custom Scientific Instruments, Inc.

### Many Foreign Testing Developments

Notable among foreign contributions in the field of testing instruments and methods were the English "Eel" fluorescent light meter to assess effectiveness and concentration of fluorescent bleaches; a German battery-operated moisture meter for testing fiber, yarn and fabric with an accuracy of plus or minus 0.3%; a new direct-reading balance for determining yarn counts by the Tex numbering system; and a high power microscope small enough to hold in the palm of the hand. Constructed in Germany was a laboratory yarn inspection machine equipped with stop-motion, of use in tracing a repeat pattern directly to the machine where a defect originated. An Indian loom-action type yarn abrader described in last February's *Textile Research Journal* was considered of value to relate yarn breakage rates to large-scale weaving. Worsteds yarn wet breaking strength tests were found to give an accurate estimate of damage in processing, according to a report published in a German journal. ■

## REPORT FROM JAPAN



By B. Mori

### **Japanese shocked by American unwillingness to make quota concessions; economic slump worries government**

OSAKA.—Cotton textile quota negotiations in Washington have left a by-product of bitterness in Japan. This feeling will in future tend to offset "conciliatory" attitude with which quota system was first set up. The Japanese side went to Washington with some proposed revisions in quota arrangement—revisions which, from its point of view, were "reasonable." Reaction here was one of shock when American side objected to any change.

**Japanese Expect Concessions**—In this part of the world everything is always subject to modification and negotiation; iron-clad agreements are a rarity. So, too, the Oriental tradition of paternalism is horrified when the bigger and stronger party refuses to make "minor" concessions to the smaller and weaker.

Herein lies the germ of even stronger disagreements in the future.

**Sinking "Floors" Brings Sinking Feelings**—Nonetheless, even those accustomed to the rule of expediency in Oriental dealings were surprised when the Government permitted Raw Silk Export Storage Corp. to lower its support prices on doupion silk by almost 10%, just after Minister of Agriculture had promised the contrary. Result is lack of confidence now in whole silk price support program; and a basis for wondering whether price "floor" for machine-reeled silk may not also be revised for silk season which starts June 1. Hesitancy which results from uncertainties is already being felt in foreign buying of silk.

**Overproduction in Silk Too**—Latest addition to list of quota-controlled exports is 10-momme silk habutae, the most important single staple silk fabric sold to the United States. This export control measure is intended to support the price, which had suffered from overproduction brought on by the very fact of good American demand.

A storm is brewing on general subject of silk fabric export quotas. Last Autumn's International Silk Congress in New York heard a complaint by American raw silk importers against larger American imports of woven silk and diminishing imports of raw silk. The Government, always sensitive to such complaints, wants a general export control on virtually silk fabrics. The weaving and exporting industries are fighting against it, principally on the grounds that bulk of Japanese silks shipped to U. S. are of types not woven in the States.

**Slump Worries Rayon Makers**—With filament yarn production cut 50% and staple 40% (from last year's highs) rayon manufacturers have laid off large numbers of workers during the first quarter. Layoffs by large companies rarity in Japan, reflecting extreme urgency of the situation. With heavy loans outstanding for their past five years of rapid expansion, manufacturers are hard-pressed financially as a result of domestic textile business slump.

Running 30% below last summer's rate, the wool spinning and weaving industries are also in tight financial shape. Cotton is little better off.

**Japanese Outlook Is Gloomy**—These conditions in Japan's basic industries are one reason for a warning from the Government that first quarter of 1958 will see one of the most severe business shake-outs since the war. An immediate result is expected to be a general lowering of export prices.

There is pressure on the Government for emergency financing over this period. At the same time, more and more segments of the textile industry are favoring formation of cartels which will set production quotas, apportion business among producers and set agreement-prices.



## Textile News Briefs

### Polymer Research Speeded

Celanese Corp. of America and National Lead Co. have announced their collaboration in research on improved polymers for plastics and fibers using newly-developed polymerization catalysts. These catalysts, produced by National Lead, are reported by the two companies to constitute a "break-through" toward successful production of new polymers, including new types of polypropylene and polystyrene. Concurrent research programs are being initiated at the Celanese Summit, N. J., laboratories, and at National Lead's unit in Sayreville, N. J.

### Rayon Tires on New Cars

Specifications for 99% of the new crop of 1958 automobiles call for super rayon cord tires as original factory equipment, according to a study made by the American Viscose Corp. The super rayon cord tires are called the safest ever made available to car owners, with the rayon cord said to be about 40% stronger than the cord in use five years ago.

**A. J. Rowlenon** has been appointed merchandise manager for Dan River Mills' Sportswear Fabrics Department.

**Harris B. Fenn, Jr.** has been appointed manager of dyestuff sales for the National Aniline Division of Allied Chemical & Dye Corp. In the same division **Eric W. Camp** has been appointed West Coast resident manager and **Gordon B. M. Walker** division industrial engineer.

Further changes at Allied include the appointments of **Wilbur H. Brumfield** and **Cortez P. Hackett** to the vice presidency of the Solvay Process Division, **Clyde A. Kitto**, director of operations, **Arnold Hanchett**, director of development, and **M. James Campbell**, manager of Solvay's Syracuse plant.

**Kenneth R. Peattie** has been appointed to the position of vice president in charge of procurement at American Felt Company.

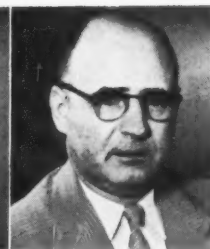
**William M. Nolan** has been promoted to the position of recruitment manager at American Viscose Corp. and **Dr. Charles J. Geyer, Jr.** has been appointed director of the corporation's Technical and Textile Service Department, succeeding **Karl M. Currier**.



S. E. Palmer



D. C. Williams



J. E. Magoffin

At Eastman Chemical Products, Inc., **Spencer E. Palmer** has become first vice president, **R. S. Leonard**, assistant vice president, and **R. L. Flanary**, comptroller. **Dr. James E. Magoffin** and **David C. Williams** have been elected vice presidents, Mr. Magoffin to head the chemicals division and Mr. Williams, the plastics division.

Other changes at Eastman include the appointment of **John P. Tokarz** as assistant to the first vice president; **E. C. Cathcart** sales manager of the plastics division, **W. P. Bussart**, assistant sales manager at the Kingsport office, and **Guy A. Kirton**, sales manager.



H. L. Ford

**Henry L. Ford** has been elected vice president and **W. Chamberlain**, assistant vice president of Tennessee Eastman Co., division of Eastman Kodak Co.

**Charles C. Knights** has retired from Allied Chemical & Dye Corp.'s National Aniline Division after 40 years of service with Allied.

**John J. Bryers** has retired from his position as comptroller at Allied Chemical and Dye Corp., Solvay Process Division. He has been succeeded by **John B. Green**.

**Louis R. Thun** has been elected chairman of the board of Textile Machine Works; **El Roy P. Master**, has become president of the company; **Frank B. Hower**, secretary; **Robert J. Ryan**, treasurer. In addition to these officers the company has named **E. William Kaul** vice president of manufacturing and **Norman E. Richards**, vice president of braiding.

**Arnold Corwin** has resigned from the position of manager of the converting department of Blue Ridge Textile Co.

**Wayne H. Lawson** has been appointed technical sales representative for Virkler Chemical Co.

**John H. Karrh** has been appointed managing director of Reeves Plastics, Inc.

**Alfred Newton Henschel** has been assigned to the position of technical service manager for New England at Sun Chemical Corp.'s Warwick Chemical Division.

**Walter F. Wolfe** has been elected vice president and **Albro N. Dana**, assistant treasurer of Indian Head Mills, Inc.

**Peter C. Fancher** has been appointed carpet sales promotion manager for James Lees and Sons Co., succeeding **Howard M. Turner, Jr.**

**Dr. Charles R. Mingins** has been appointed chairman of the division of engineering at Lowell Technological Institute, replacing **Prof. Harry C. Brown** who has retired.

**T. Bayard Baldrige, Jr.** has been appointed sales engineer for the Rodman H. Martin Co., Inc.

**Clarence E. Hieserman** has been named to the newly-created post of senior section head in charge of pilot plant activities at Chemstrand Corp.'s Research and Development Center.

**Stephen P. DeMallie** has been appointed technical assistant to the president of Callaway Mills, Inc.



L. R. Thun



E. P. Master

# Will it Fade?



**BE SURE with  
FADE-OMETER®  
and  
LAUNDER-OMETER®  
tests**



A battery of Fade-Ometers at  
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New dye colors, new fibers, yarns, prints, and the many combinations of dyestuffs all present the question of color fastness, reaction to light laundering detergents, shrinkage, bleeding and mechanical action.

Atlas-Ometer tests provide reliable, factual answers. Precision controls in the Fade-Ometer and Laundry-Ometer permit careful regulation of all factors. Any test program can be duplicated exactly whenever desired in the development of a product or for quality control in production.

Dyestuffs and fabrics that stand up in Fade-Ometer and Laundry-Ometer tests, will prove satisfactory in service. Producers of soft goods who can give a specific color fastness rating to the product have a sales advantage both price-wise and in consumer acceptance.

**ATLAS ELECTRIC DEVICES CO., 4114 N. Ravenswood Ave., Chicago 13, Ill., U. S. A.**

Sales representatives in principal cities throughout the world.



## Textile News Briefs

### Chemstrand Scholarships

Chemstrand Corp. has established a fund to provide undergraduate scholarships and grants-in-aid at 30 U. S. colleges. The scholarships, according to Chemstrand president Edward A. O'Neal, Jr., are for upper class students, preferably seniors, in the fields of chemistry; physics; chemical, mechanical, electrical and textile engineering; business administration; industrial management and the liberal arts. O'Neal added that it is to his company's long-range advantage to encourage superior students to prepare themselves for responsible posts in the chemical textile fiber industry.

### Fabulized Canadian Agent

Chemtex Products, Ltd., 49 Densley Ave., Toronto 15, Ont., has been appointed Canadian representative for Fabulized, Inc. "Fabulized" is a new finishing process said to give synthetic fabrics and blends a high degree of absorbency.

### Arnold, Hoffman Expansion

Arnold, Hoffman & Co., Inc., has established a Techno-Commercial Department to plan the company's development and expansion program. Dr. J. R. Myles of Imperial Chemical Industries (New York), Ltd., will be in charge of the new department, assisted by Dr. Charles A. Robinson, of Arnold, Hoffman's research unit.

### New Dow Silicone Catalog

Dow Corning Corp. has published its "1958 Dow Corning Reference Guide," which describes over 150 commercially available silicone products, including many introduced by the firm within the past year. The 16-page, illustrated guide also contains detailed charts, tables, graphs and data on properties and performance. For free copies write the editors.

### Turbo Sales Agent

Turbo Machine Co., Lansdale, Pa., has appointed Parrott & Ballentine, of Greenville, S. C., as its exclusive sales agent in the south for Turbo's entire line of textile machinery. Turbo's line has been expanded by its recent acquisition of Smith-Drum Co. Parrott & Ballentine also is southern sales agent for several firms manufacturing dyeing, drying and finishing equipment.

(Continued on Page 75)



# U. S. MAN-MADE FIBER PRICES

This schedule lists the prices of yarns, staple and tow as reported by the producers in December 1957. All prices are given as subject to change without notice.

## RAYON FILAMENT YARN

### American Bemberg

Current Prices

#### Regular Production Reel Spun Yarn

Den/Fil	No Turn Skeins	Turned* Skeins & Cones	8 1/2 Turns	12 Turns	15 Turns	18 Turns
40/30	\$1.49	\$1.95	.....	.....	.....	.....
50/36	1.24	1.50	.....	.....	.....	.....
65/45	1.14	1.30	.....	\$1.53	.....	1.80
75/60**	1.04	1.18	.....	1.41	\$1.46	1.58
100/74**	.94	1.08	.....	1.33	1.38	1.49
125/90	.94	1.05	\$1.09	1.30	.....	1.44
150/120	.93	1.02	1.12	1.27	.....	.....
300/225	.....	.95	.....	.....	1.08	.....
900/372	.....	.85	.....	.....	.....	.....
1800/744	.....	.85	.....	.....	.....	.....

\* Turn includes twists up to 6 turns on 40 and 50 denier, and up to 5 turns on heavier deniers.

\*\* Spun Dyed Cupracolor Black 15¢ per lb. extra.

#### "44" HH Spool Spun Yarn

Den/Fil	No Turn Tubes	No Turn Beams	5 Turn Beams	5 Turn Cones	12 Turn Beams	12 Turn Cones	15 Turn Cones
40/30	\$1.35	\$1.35	.....	.....	.....	.....	.....
50/36	1.00	1.00	.....	.....	.....	.....	.....
65/45	1.05	.....	.....	.....	.....	\$1.42	.....
75/45*	.97	.....	\$1.08	\$1.08	\$1.31	1.31	\$1.39
100/60*	.89	.....	1.03	1.03	1.23	1.23	1.31
125/60	.84	.....	.99	.99	.....	.....	.....
150/90*	.77	.....	.81	.81	1.15	1.15	1.24
150/120	.81	.....	.....	.93	.....	.....	.....

\* Available also in Spun Dyed Cupracolor Black at 15¢ per lb. extra.

#### "44" HH "Parfe" (Type 51) Spool Spun Yarn

Den/Fil	No Turn Cones	5 Turn Cones	5 Turn Beams	12 Turn Cones	15 Turn Cones
50/36	\$1.60	\$1.85	\$1.85	.....	.....
75/45	1.45	1.55	1.55	\$1.75	\$1.85
100/60	1.35	1.44	1.45	1.65	1.75
150/90	1.18	1.25	1.25	1.60	1.70

#### Nub-Lite (Short Nubbi)

Code	Den/Fil	2 1/2 Turn Natural Cones	2 1/2 Turn Cones*	5 Turn Natural Cones	5 Turn Cones*
1515	160/90	.....	.....	\$1.45	\$1.35
1519**	155/90	.....	.....	1.45	1.35
2008	200/120	.....	.....	1.06	.96
3002	315/180	\$1.10	\$1.00	.....	.....
4011	410/224	1.10	1.00	.....	.....
6001	600/360	1.08	.98	.....	.....
8001	860/450	1.08	.98	.....	.....

\* Basic price for cones when dyed. Dyed Colors 30 and 35 cents above basic price. Prices based on 200 lb. dyed lots only. Prices for natural yarn skeins same as natural cone prices.

\*\* Code 1515 can be run in warp or filling.

#### CUPIONI Type B

Code	Den/Fil	2 1/2 Turn Cones	5 Turn Cones
9610	50/30	.....	\$2.14
9650	70/45	\$1.64	.....
9660	100/60	1.48	.....
1545	150/90	1.25	.....
9720	200/120	1.20	.....
9730	285/135	1.10	.....
9792	450/225	1.10	.....
9814	600/372	1.07	.....
9837	940/372	.97	.....

\* Spun Dyed Cupracolor is spun 150, 285, and 940 deniers at 35¢ per pound extra. Cupracolor Black comes in all deniers.

#### STRATA SLUB

Code	Den/Fil	Turned Cones	Price
9747	275/225	3 1/2	1.20
9768	450/372	2 1/2	1.10
9823	600/372	2 1/2	1.05
9847	960/372	2 1/2	.97
9885	1290/372	1 1/2	.95
9934	2680/744	1 1/2	.95

\* Spun Dyed Cupracolor is spun in 600 and 960 deniers at 35¢ per pound extra.

#### FLAIKONA

Code	Den/Fil	Turned Cones	Price
9669	150/148	2 1/2	\$1.35
9769	300/224	3 1/2	1.40
9807	600/405	2 1/2	1.20
9840	900/450	2 1/2	1.10
9924	2000/744	2 1/2	1.00

\* Spun Dyed Cupracolor Black 35¢ per pound extra.

Terms: Net 30 days, F. O. B. shipping point. Minimum freight allowed to consignee's nearest freight station east of the Mississippi River. To points west of the Mississippi River minimum freight allowed to Memphis, Tennessee. Goods after shipment shall be at buyer's risk. Merchandise transported in seller's own trucks or those of its affiliates is sold F. O. B. delivery point.

### American Enka Corp.

Current Prices

Effective December 4, 1956

Standard Quality Yarns

#### Standard Quality Rayon Yarns

A. Natural

Den./Fil.	Luster	Turns	Weaving Cones	Beams	Long	Short	Cakes	Knitting Cones
50/18	E	5 S	.....	.....	.....	.....	.....	1.56
50/20	B	2.5 S&Z	.....	.....	.....	.....	1.45	1.08
75/10	B	3 S&Z	.....	.....	.....	.....	.....	.....
75/18	E	4 S	.....	.....	.....	.....	.....	.....
75/30	B	2.5, 4S&Z	1.17	1.17	.....	.....	1.08	1.17
75/30	B	8 S	1.22	.....	1.37	.....	1.08	1.22
75/45	P, E	2.5, 4, 5S&Z	1.17	1.17	1.23	1.37	1.08	1.17
75/60	B, P	3, 4 Z	1.22	.....	.....	.....	1.10	1.22
100/14	B, P	3 S&Z	.....	.....	.....	1.12	.96	.....
100/40	B, E	12 S	.....	.....	.....	.....	.....	1.27
100/40	B, P, E	4, 5 S&Z	.....	.....	.....	.....	.96	1.04
100/40	B	6 S	1.10	.....	.....	.....	.....	.....
100/40, 60	B, P	2.5, 4S&Z	1.04	1.04	1.08	1.12	.96	1.04
100/60	E	2.5 S	1.06	1.06	.....	.....	.98	.....
125/40	E	3 Z	.....	.....	.....	.....	.....	.96
150/40	B, P, E	2.1, 3S&Z	.91	.91	.94	.99	.86	.90
150/40	B, E	5 S&Z	.91	.....	.....	.....	.94	.99
150/40	B, E	8 S&Z	.97	.....	1.00	1.05	.....	.....
150/40	B, P	10 S&Z	1.03	1.03	.....	.....	.....	.....
150/90	B, E	2.1 S&Z	.92	.92	.....	.....	.87	.....
200/40	P	3 Z	.....	.....	.....	.....	.....	.82
200/40	B, P	8 S	.....	.....	.....	.....	.95	.....
250/60	P, E	2.4 Z	.....	.....	.....	.....	.....	.75
300/50	B, E	3 S	.73	.73	.....	.....	.....	.....
300/60, 120	B, P, E	2.1 S&Z	.73	.73	.....	.....	.76	.71
300/60	B	3.5 S	.73	.73	.....	.....	.76	.71
300/60	B	4.3 S	.76	.76	.....	.....	.....	.74
300/60	B	7 S	.83	.....	.....	.....	.....	.....
300/40, 120 H.T.	B	2.5, 3, 4S	.75	.75	.....	.....	.....	.....
450/80	B	3 S	.70	.70	.....	.72	.69	.....
600/80, 120	B, E	2.5 S	.69	.69	.....	.....	.67	.....
900/120	B	3.4 S	.68	.....	.....	.....	.66	.....
900/120 H.T.	B	3.6 S	.70	.....	.....	.....	.68	.....

#### "Jet spun" Colored Yarns

Den./Fil.	Tenacity	Turns	Weaving Cones	Beams*	Cakes	Colors
100/40	Regular	2.5S	1.39	1.39	.....	All
150/40	Regular	2.1S	1.26	1.26	.....	All
200/40	Regular	8.3S	1.27	.....	.....	All
450/80	Regular	3.0S	1.05	.....	.....	All
300/40	High	3.4S	1.10	1.10	.....	All
600/80	High	3.4S	1.06	.....	.....	All
900/120	High	3.4S	1.05	1.05	.....	All

Registered trade mark of American Enka solution dyed rayon yarn.

\* Single color.

#### "Skyloft"

American Enka's Lofted Filament Rayon Yarn

Natural and Jet spun (R)

Types Available and Prices

Denier	Den./Per Filament	Natural	Black	Other Colors
2200	15	\$67	\$79	\$84
2700	15	.65	.75	.82
4300	8	.64	.74	.81
5300	15	.63	.73	.80

### American Viscose Corp.

Effective December 14, 1956

#### Graded Yarns

Denier	Filament	Type	Short Skeins	Long Skeins	All Cones Beams	Cakes
50	20	Bright & Dull	\$ .....	\$1.59	\$1.56	\$1.45
60	10	Bright	.....	.....	1.41	1.30
75	10-30	Bright	1.24	1.20	1.17	1.08
75	30	Dull	.....	.....	1.17	1.08
100	14-40	Bright	1.12	1.07	1.04	.96
100	60	Dull	.....	.....	1.06	.98
150	24-40-60	Bright & Semi-Dull	.99	.94	.91	.86
150	40	Dull	.....	.....	.91	.86
150	90	Dull	.....	.....	.92	.87
200	10-44	Bright	.90	.85	.82	.78
250	60	Semi-Dull & Dull	.82	.78	.75	.73
300	44	Bright & Dull	.79	.76	.73	.71
300	234	Dull	.....	.....	.75	.73
300	120	Rayflex 6-Turns	.....	.....	.85	.83
450	100	Bright	.....	.72	.70	.68
600	100	Bright	.....	.71	.69	.67
900	60-100-150	Bright	.....	.70	.68	.66
1200	75	Bright	.....	.67	.65	.....
2700	150	Bright	.....	.70	.68	.....

#### Extra Turns Per Inch

Denier	Filament	Type	Short Skeins	Long Skeins	All Cones Beams	Cakes
75	30	Bright 6-Turns	\$1.36	\$1.32	\$1.29	\$ .....
100	40	Bright 6-Turns	1.24	1.19	1.16	1.08
150	40	Bright 6-Turns	1.09	1.04	1.01	.96
200	44	Bright 6-Turns	.....	.95	.92	.....
300	15	Bright 5-Turns	.....	.....	.78	.....
300	44	Bright 5-Turns	.....	.86	.83	.81
600	30	Bright 5-Turns	.....	.76	.74	.72

## Rayflex Yarns

75	30	Rayflex	\$	\$	\$1.20	\$1.11
100	40	Rayflex			1.07	.99
150	60	Rayflex			.94	.89
200	75	Rayflex			.85	.81
300	120	Rayflex			.75	.73
300	120	Rayflex 6-Turns			.85	.83
450	120	Rayflex			.72	.70
600	234	Rayflex			.71	.69
900	350	Rayflex			.72	.70

## Super Rayflex Yarns

600	490	Super Rayflex	\$	\$	\$ .78	\$
900	720	Super Rayflex			.77	

## Thick and Thin Yarns

150	40-90	Bright & Dull	\$	\$	\$1.15	\$
200	75	Bright & Dull			1.05	
300	120	Bright & Dull			.95	
450	100	Bright & Dull			.92	
490	120	Bright & Dull			.95	
900	350	Dull			1.00	
920	120	Bright & Dull			1.00	

## Colorspun Yarns

Currently producing regular and high tenacity at premiums at \$.35 per pound.

## Viscose Filament Yarns

The following material deposit charges are required:

Metal Section Beams	\$170.00 each
Wooden Section Beams	55.00 each
Wooden Section Beam Crates	30.00 each
Metal Section Beam Racks	75.00 each
Metal Tricot Spools—14" flange	30.00 each
21" flange	60.00 each
32" flange	150.00 each
Metal Tricot Spool Racks—14" flange	135.00 each
21" flange	100.00 each
32" flange	75.00 each
Wooden Tricot Spool Racks	20.00 each
Cloth Cake Covers	.05 each

Same to be credited upon return in good condition—freight collect. Terms: Net 30 days.

## Celanese Corp. of America

Current Prices

Effective December 14, 1956

Den. Fil. Twist	Beams	Cones	Cakes	Non Shrink Tubes
<b>#49 and #14 Production</b>				
75/30/3 Bright		\$1.11	\$1.03	
100/40/2Z	.96			
100/40/3 "	.98	.96	.91	
100/40/5 "		1.02	.97	
100/60/3 "		.97	.92	
125/40/2Z "	.94	.92		
150/40/3 "	.89	.85	.80	
150/40/2Z "	.87			
150/40/3 "		.91	.86	
150/40/8 "		.97	.92	
150/40/0 " NS		.71		
300/50/3 "	.72	.71	.69	
300/50/0 " NS		.63		
<b>#20 Production</b>				
150/40/3 Bright	.87	.83	.78	
150/40/0 " NS	.87	.71		
300/50/3 "	.72	.71	.69	
300/50/0 " NS		.63		
<b>#20 Production</b>				
100/40/3 Dull		.96	.91	
100/60/2Z "	1.00			
100/80/0 "		.93		
100/80/5 "	1.04	1.02	.97	
150/40/3 "	.87	.83	.78	\$ .77
150/40/0 " NS		.71		
150/90/3 "		.90	.85	
250/60/0 " NS		.67		
250/60/3 "		.75	.70	
<b>#52 Thick &amp; Thin Rayon</b>				
150/60/3 Bright		1.15		
450/120/3 "		.89		

Terms: Net 30 days. Prices per pound F.O.B. shipping point, lowest transportation allowed to destination in U.S.A. east of the Mississippi River.

Prices subject to change without notice.

All previous prices withdrawn.

Note: Prices on unlisted items can be obtained upon request.

## E. I. du Pont de Nemours & Co.

Textile Fibers Dept.

Current Prices

Effective with orders December 7, 1956

## Bright and Dull

Den.	Fil.	Turns/ Inch Up to	(A) Cones, Beams, Tubes	Cakes
40	20	3	Textile "Cordura"	\$1.85
50	20	3		1.63
50	20	3	Textile "Cordura"	1.65
50	35	3	Textile "Cordura"	1.70
75	10	3		1.17
75	30	3		1.17
100	15	3		1.04
100	40	3		1.04
100	60	3	Dull	1.08
125	50	3		.96
150	40	3		.91
150	60	3		.91
150	60	3	Textile "Cordura"	.92
150	90	3	Dull	.92
150	100	3	Dull	.92

300	50	3.5	Textile "Cordura"	.73	.71
300	120	3		.74	.72
450	72	3		.70	.68
600	96	3	Textile "Cordura"	.70	.67
600	240	3		.69	.68
900	50	3		.68	.66
900	144	3	Textile "Cordura"	.68	.65
1185	480	3		.68	
1800	100	3		.68	
2700	150	3		.68	

## Thick and Thin

100	40	3	#7	1.38	1.38
150	90	3	#7	1.15	1.16
200	80	3	#7	1.05	1.06
450	100	3	#7	.89	.90
1100	240	3	#60	1.00	1.00
2200	480	3	#60	.95	.95

(A) 2g/lb. additional for cones less than 3# and tubes less than 2#.

Terms: Net 30 days.

Domestic Freight Terms are F.O.B. shipping point, freight prepaid our route to points east of the Mississippi River within the continental limits of the United States, for points west of the Mississippi River freight allowed to the Mississippi River crossing nearest purchaser's mill if shipped overland, or port of exit of purchaser's choice east of Mississippi River.

\* "CORDURA" and "SUPER CORDURA" are DuPont's registered trade-marks for its high tenacity rayon yarn.

## Industrial Rayon Corp.

Effective December 21, 1956

Denier	Filament	Turns per In.	Type	2.8 Lb Cones	4.4 Lb Cones	Beams	2.2 Lb Tubes	4.4 Lb Tubes
100	40	2.5 "S"	Bright	1.04		1.04		
150	40	2.5 "S"	Bright	.91		.91		
150	40	2.5 "S"	Luster #4	.91		.91		
150	40	2.5 "S"	Bright inter-mediate strength	.92				
200	20	2.5 "S"	Bright	.82				
200	40	2.5 "S"	Bright	.82				
300	44	2.5 "S"	Bright	.73		.73		
300	80	2.5 "S"	Bright	.73		.73		
300	80	2.5 "S"	Luster #4	.73		.73		
300	80	2.5 "S"	Bright extra strong	.75		.75		
450	60	2.0 "S"	Bright	.70	.70			
600	90	1.5 "S"	Bright	.69	.69	.69	.69	
900	50	2.0 "S"	Bright	.68	.68	.68	.68	
900	150	1.5 "S"	Bright	.68	.68	.68	.68	

Luster #4 is semi-dull.

Terms: Net 30 days f.o.b. point of shipment; title to pass to buyer on delivery of goods to carrier. Domestic transportation charges prepaid with transportation allowed at lowest published rate to all points east of the Mississippi River. PRICES ARE SUBJECT TO CHANGE WITHOUT NOTICE.

## North American Rayon Corp.

Current Prices

First Quality Yarns	Den./Fil	Twist	Knitting* Cones	No Twist Knitting Cones	Beams, Tubes* and Weaving Cones	Untreated Cakes
Normal Strength Yarns NARCO	75/30	3.5			\$1.17	\$1.08
	75/30	15			1.30	
	75/30	20			1.37	
	100/40/60 Brt.	3.5			1.04	.96
	100/40/60	12			1.22	
Semi-High Strength Yarns Hi-NARCO	125/52/60	3			.96	.90
	125/52	10			1.13	
	150/42/60/75	3	\$ .90		.91	.86
	150/42	0		\$ .71		
	300/75	3	.73		.73	
Oiled Cones \$ .01 Per Pound extra for Graded Yarns only.	300/75	0		.63		
	600/98	3	.69		.69	
	900/46	2.5	.68		.68	
	1800/92	2.5	.68		.68	
	300/75	3			.74	

\* 1 lb. tubes \$.02 Per Pound extra for Graded Yarns only.

Terms: Net 30 days, F.O.B. shipping point, minimum freight allowed to consignee's nearest freight station east of the Mississippi River. To points west of the Mississippi River minimum freight to Memphis, Tennessee allowed. Goods after shipment shall be at buyer's risk. Merchandise transported in seller's own trucks or those of its affiliates is sold F.O.B. delivery point. Prices subject to change without notice.

## RAYON HIGH TENACITY YARN and FABRIC


American Enka Corp.

Effective June 1, 1957

## Tempra (High Tenacity)

Denier	Elongation	Beams & Cones
1100/480	Low	.59
1230/480	High	.59
1650/720	Low	.55
1820/720	High	.55
2200/960	High & Low	.54
Suprenka (Extra High Tenacity)		
1650/720	Low	.58
1900/720	High	.58
2200/960	Low	.57

Terms: Net 30 days, f.o.b. Enka, North Carolina, or Lowland, Tennessee; minimum freight allowed to first destination east of the Mississippi River.



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*W. Szczepanski,  
Chief Maintenance Engineer*

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(Continued from Page 72)

### New Kidde Textile Subsidiary

Walter Kidde & Co. has established a new, wholly-owned subsidiary, Kidde Textile Machinery Corp. at Bloomfield, N. J., to handle all of its textile machinery interests. Officers of the new company are: William J. Behr, Jr., president; Howard W. Rudnick, vice president; H. C. Noe, vice president-engineering; D. W. Mack, treasurer, and G. C. Hiss, secretary. Walter H. Freygang is chairman of the board.

### New Interchemical Unit

Interchemical Corp. consolidated its textile colors and R-B-H dispersions divisions into a new color and chemicals division, as of January 1, 1958. Headquarters of the new unit are in Hawthorne, N. J. William N. Davies is general manager of the division, William J. Rothemich general production manager, and Harold D. Craft general sales manager.

### Rayon Tow Prices Up

American Viscose Corp. has increased prices one cent a pound for its large rayon tow (group continuous filaments—200,000 total denier). The 5½ denier and finer tow price moved from 32 to 33 cents; 9 denier and coarser rose from 34 to 35 cents a pound. Other Avisco rayon prices were not changed.

### Quality Control Course

The eleventh annual short course in Quality Control by Statistical Methods will be offered by the College of Engineering, University of Illinois, with the cooperation of the Division of Engineering Extension at Urbana, Ill. from March 10 through 20. Further information may be obtained by writing to Prof. John A. Henry, Room 205, Mechanical Engineering Laboratory, University of Illinois, Urbana, Ill.



James J. Pollack

James J. Pollack has been appointed product sales manager of Saran monofilament yarns at General Tire & Rubber Co.'s Bolta Products Division, succeeding Dave Donnan who has been promoted to sales manager of automotive original equipment.

(Continued on Page 83)

# NYLON DACRON RAYON WORSTED



**COMPLETE PACKAGE  
SERVICE** on dyed and  
thrown filament yarns, de-  
livered on tubes, cones or  
in the cake.

**Spun and Worsted Yarns**



*Dyers & throwsters of  
modern yarns since 1922*

## HOFFNER RAYON CO.

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**SALES REPRESENTATIVES**

The Tillinghast-Stiles Co.  
Providence, R. I. Chicago, Ill.  
Shannonhouse & Wetzel, Johnston  
Building, Charlotte 2, N. C.

## American Viscose Corp.

Effective November 1, 1956

Revised June 10, 1957

Super Rayflex				
Denier	Filament	Twist	Beams	Cones
1100	980	0	\$.63	\$.63
1100	980	4.1Z	.63	—
1100	980*	0-2Z	—	.63
1650	980	0	.58	.58
1650	980	4.1Z	.58	—
1780	980*	0-2Z	—	.58
2200	980	0	.57	.57

\* High Elongation Sewing Yarn.

Tire Yarn				
1100	490	2.5Z	.59	—
1650	980	0	.55	.55
1650	980	3.6Z-4.1Z	—	—
2200	980	0	.54	.54

High Strength				
1150	490	2.5Z	.59	.59
1230	490	3.1Z	.59	.59
1650	980	4Z	.55	.55
1875	980	4Z	.55	.55

Super Rayflex, Tire Yarn and High Strength yarns are sold "Not Guaranteed for Dyeing."

Tire Fabric				
		Tire Yarn	Super Rayflex	
1100/490/2		\$.69	\$.73	
2200/980/2		.625	.655	

Above prices based on 80% minimum Carcass, 15% maximum Top Ply, 5% maximum Breaker.

Production Factor				
525	Open	Carcass	\$.635	\$.665
300	490	Top Ply	.645	.675
115	275**	Breaker	.67	.70

\* Determined by dividing total ends by picks.  
\*\* Orders limited to 5% of total 1650 Fabric booked for any given period.

The following deposit charges are made on invoices:  
Beams \$55.00 each  
Crates (Metal) 75.00 each  
Fabric Shell Rolls 3.50 each  
Same to be credited upon return in good condition—freight collect  
Terms: Net 30 days.

## Celanese Corporation of America

Effective December 27, 1955

Supersedes September 12, 1955

Fortisan Yarn Prices				
Denier	Packages	Natural	Black	
30/2.5/40	2 lb. Cones	\$3.00 lb.	\$3.35 lb.	
60/2.5/80	4 " "	2.40 "	2.75 "	
90/2.5/120	4 " "	2.25 "	2.60 "	
120/2.5/160	4 " "	2.05 "	2.40 "	
150/2.5/180	4 " "	1.95 "	2.30 "	
270/2.5/360	4 " "	1.85 "	2.20 "	
300/2.5/360	4 " "	1.85 "	2.20 "	

60/2.5/80 Olive Green—Spun Dyed—OG106 4 lb. Cones 3.50 lb.  
Terms: Net 30 days. Prices per pound F.O.B. shipping point, lowest transportation allowed to destination in U. S. A. east of the Mississippi River.

Prices subject to change without notice.  
All previous prices withdrawn.  
Note: Prices on unlisted items can be obtained upon request.

Fortisan-36 Rayon Yarn				
Bright				
Denier and Filament	Twist	4# cones	8# cones	Beams

Denier and Filament	Twist	4# cones	8# cones	Beams
270/280	0.8Z	\$2.30	—	—
300/280	0.8Z	\$2.05	—	—
300/280	3Z	\$2.20	—	—
400/400	0.8Z	\$1.75	—	—
400/400	0	—	—	\$1.70
800/800	0.8Z	\$1.25	\$1.25	\$1.20
800/800	3Z	\$1.40	—	—
800/800	0	—	—	\$1.25
1600/1600	0.8Z	\$1.15	\$1.15	\$1.10
1600/1600	2 1/2Z	\$1.30	—	—
1600/1600	0	—	—	\$1.15

Terms: Net 30 days. Shipments prepaid to any destination in U. S. A. East of the Mississippi River. Shipments West of the Mississippi will be made on a collect freight basis and allowance will be made for the lowest transportation cost to the point of river crossing.

Prices subject to change without notice.  
All previous prices withdrawn.  
Note: Prices on unlisted items can be obtained upon request.

## E. I. du Pont de Nemours & Co.

Textile Fibers Dept.

Current Prices

Effective with shipments April 17, 1957

"Super Cordura"

Den	Fil	Turns/in	All Packages
1100-480		2	\$.63
1100-720		2	.63
1200-720		2	.63
1250-480		2	.63
1530-960		2	.58
1600-960		2	.58
1650-720		2	.58
1650-1100		2	.58
1800-1100		2	.58
1900-720		2	.58
2200-960		2	.57
2200-1440		2	.57
2400-1440		2	.57
2450-960		2	.57

Terms: Net 30 days.

Domestic Freight Terms are F.O.B. shipping point, freight prepaid our route to points east of the Mississippi River within the continental limits of the United States, for points west of the Mississippi River freight allowed to the Mississippi River crossing nearest purchaser's mill if shipped overland, or port of exit of purchaser's choice east of Mississippi River.

\* "CORDURA" and "SUPER CORDURA" are DuPont's registered trade-marks for its high tenacity rayon yarn.

## Industrial Rayon Corp.

Effective November 1, 1956

### Unbleached Bright High Tenacity Yarns

SINGLE END BEAMS AND CONES:

Den.	Fl.	Turns	4.4 Lb. Cones	2.2 Lb. Tubes	4.4 Lb. Tubes
1100	480	1.5 "Z"	.59	.59	.59
1650	720	1.5 "Z"	.55	.55	.55
2200	1000	1.5 "Z"	.54	.54	.54
3300	1440	1.5 "Z"	.54	.54	.54
4400	2000	1.5 "Z"	.54	.54	.54

"Above Prices apply to Type 100. Type 200 Tyron Prices are 3¢ more."

Terms: Net 30 days f.o.b. point of shipment; title to pass to buyer on delivery of goods to carrier. Domestic transportation charges allowed at lowest published rate to all points east of the Mississippi River.

Prices are subject to change without notice.

## North American Rayon Corp.

High-Strength Yarns—SUPER-NARCO

Den.	Fl.	Twist	Cones	Beams
1650	720	3Z	—	\$.55
1850	720	3Z	\$.55	—

Super High Strength Yarns—				
1650	720	1.5Z	.58	.58

Terms: Net 30 days, f.o.b. shipping point. Minimum freight allowed to consignee's nearest freight station East of the Mississippi River. To points West of the Mississippi River minimum freight to Memphis, Tenn. allowed. Goods after shipment shall be at buyer's risk. Merchandise transported in seller's own trucks or those of its affiliates if sold f.o.b. delivery point.

## ACETATE FILAMENT YARN

### American Viscose Corp.

Current Prices

Effective December 21, 1956

### Bright and Dull

\* Intermediate Twist

Denier & Filaments	Cones & Tubes	Twister Tubes	Warps	Spinning Cones	Twist Warps
55/14	\$1.04	\$1.02	\$1.05	\$.98	\$.99
75/20	1.00	.98	1.01	.94	.95
100/28	.95	.93	.96	.89	.90
120/32	.86	.84	.87	.80	.81
150/41	.77	.76	.78	.72	.73
200/54	.73	.72	.74	.69	.70
300/80	.69	.68	.70	.65	.66

\* Standard Twist 2¢ additional.

Terms: net 30 days.

## Celanese Corp. of America

Current Prices

Effective December 20, 1956

### Bright and Dull

Intermediate Twist

Denier and Filaments	4 & 6-Lb. Cones	4 & 6-Lb. Beams	4-TM Tubes	4-Pound Cheeses	Cones	Beams	0 Twist Tubes
45/13	\$1.17	\$1.18	\$	\$	\$.98	\$.99	\$.925
55/15	1.04	1.05	—	—	.94	.95	.84
75/20	1.00	1.01	.98	—	.97	.98	.81
75/50	1.02	1.03	1.00	—	.89	.90	.81
100/28-40	.95	.96	.93	—	.80	.81	.69
120/40	.86	.87	.85	.77	.72	.73	.69
150/40	.77	.78	.77	—	.69	.70	.63
200/52	.73	.74	.73	—	.63	.64	.61
300/80	.69	.70	.69	—	—	—	—
450/120	.67	.68	.67	—	—	—	—
600/160	.65	.66	.65	—	—	—	—
900/80-240	.63	.64	.63	—	—	—	—

150 Denier 12-TM Tubes .76  
55/0/15 Dull Tricot Beams .985  
2-Pound Cheeses .01 Less Than 4-Pound Cheeses  
2-BU and 4-BU Tubes Same Price as 4 and 6-Lb. Cones  
2-Lb. Twist Tubes .01 Less Than 4 & 6-Lb. Twist Tubes on 120, 200 and 300 Denier Intermediate Twist

Terms: Net 30 days. Prices per pound F.O.B. shipping point, lowest transportation allowed to destination in U.S.A. east of the Mississippi River.

Prices subject to change without notice.  
All previous prices withdrawn.  
Note: Prices on unlisted items can be obtained upon request.

## Celaperm Filament Yarn Prices

Denier and Filaments	4 & 6-Lb. Cones	4 & 6-Lb. Beams	Cones	Beams
55/15	\$1.37	\$1.38	\$1.31	\$1.32
75/20	1.34	1.35	1.28	1.29
100/26	1.28	1.29	1.22	1.23
120/40	1.19	1.20	1.13	1.14
150/40	1.11	1.12	1.06	1.07
200/52	1.05	1.06	1.01	1.02
300/80	1.01	1.02	.97	.98
450/120	.99	1.00	.95	.96
600/160	.97	.98	—	—
900/80	.94	—	—	—

3 to 5 Turns on Cones or Beams — \$.02 Additional

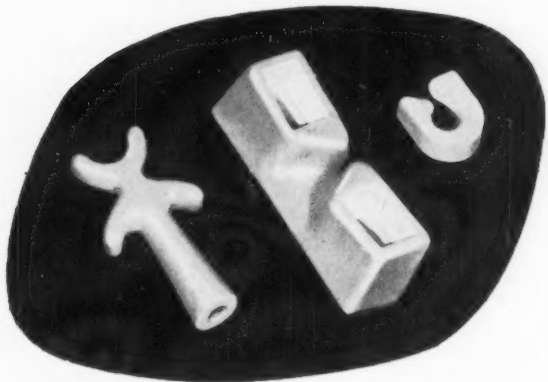




### Polyethylene Filter Cloths

Filter cloths woven of monofilaments of Fortiflex, the new Celanese rigid polyethylene, have been introduced by Reeves Bros., Inc., for use in wet chemical and electro plating processes. Reeves reports the cloths, which are inert in a wide variety of chemicals, have a much longer life than filters made from conventional yarns such as cotton, and are stronger and more heat resistant than those made from other plastic monofilaments. For further information write the editors.

*Like absolute zero, perfection is a useful  
if never quite attainable goal.*



*We who manufacture...*

### LAMBERTVILLE THREAD GUIDES

Strive for perfection in every guide we make. Exacting quality inspection for dimensional accuracy, smoothness and durability give them unsurpassed efficiency and economy. In white and 'Durablu' finish. Write for catalog and samples.

**LAMBERTVILLE CERAMIC**  
AND MANUFACTURING COMPANY  
LAMBERTVILLE NEW JERSEY

FEBRUARY, 1958

## The Laurel Leaf

BUSINESS MAGAZINE EDITION



*It's New!*

### LAUREL SPOTTER AF-2

Meet Laurel SPOTTER AF-2, newest member of the Laurel family of quality products... a 100% active, emulsifiable oil-type product recommended for use on synthetic as well as natural fabrics for the removal of oil and grease spots. Developed under critical quality control methods, it is now being widely used throughout the industry.

Laurel SPOTTER AF-2 is extremely efficient, having minimum adverse effect on dyeing and finishing operations. Its action results by combining with the oil and grease in the spots, thus forming an emulsifiable combination. This is readily removed in normal scouring and boiling-off processes.

A Little Laurel SPOTTER AF-2 goes a long way. It is easy to apply, and no rubbing is required. In fact, just enough Laurel SPOTTER AF-2 to cover the spot or streak will effectively do the job.

Give this new Laurel product a try and we think your problems in oil and grease spot removal will be over. You'll like its versatility, too, eliminating these spots on *whatever* fabrics handled. Like a free sample of Laurel SPOTTER AF-2? Write today. No obligation, of course.



**Laurel** SOAP MANUFACTURING CO., INC.  
TIOGA, THOMPSON & ALMOND STS., PHILA. 34, PA.

Warehouses: Paterson, N. J., Chattanooga, Tenn., Charlotte, N. C.

## Celaperm Black Yarn Prices

Effective March 11, 1955

Denier and 4 & 6-Lb.

Filaments	Intermediate Twist		Spinning Twist	
	Cones	Beams	Cones	Beams
55/15	\$1.17	\$1.18	\$1.11	\$1.12
75/20	1.14	1.15	1.08	1.09
100/26	1.08	1.09	1.02	1.03
120/40	.99	1.00	.93	.94
150/40	.91	.92	.86	.87
200/52	.85	.86	.81	.82
300/80	.81	.82	.77	.78
450/120	.79	.80	.75	.76
600/160	.77	.78	.....	.....
900/80	.74	.....	.....	.....

3 to 5 Turns on Cones or Beams — \$.02 Additional  
Terms: Net 30 days. Prices per pound F.O.B. shipping point, lowest transportation allowed to destination in U.S.A. east of the Mississippi River.

Prices subject to change without notice.

All previous prices withdrawn.

Note: Prices on unlisted items can be obtained upon request.

## E. I. du Pont de Nemours & Co.

Textile Fibers Dept.

Current Prices

Denier & Filament	Acetate Low Twist		Intermediate Twist		Rms.
	Tubes	Beams	Cones	Beams	
45-13	\$1.03	\$1.11	\$1.12	.....	.....
55-18	.925	.985	.99	.....	.....
55-24	.925	.985	.99	.....	.....
75-24	.84	.94	.95	.....	.....
75-50	.....	.....	.97	.....	.....
100-32	.81	.89	.90	.....	.....
120-50	.77	.80	.81	.....	.....
150-40	.69	.72	.72	.....	.....
200-60	.68	.....	.69	.....	.....
240-80	.....	.....	.67	.....	.....
300-80	.63	.65	.65	.....	.....
450-120	.63	.....	.63	.....	.....
600-160	.....	.....	.65	.....	.....
900-44	.....	.....	.63	.....	.....
900-240	.....	.....	.63	.....	.....
1800-88	.....	.....	.61	.....	.....
2700-132	.....	.....	.61	.....	.....
3000-210	.....	.....	.61	.....	.....

(A) Regular Twist (2.9 and 5 T.P.I.)—add \$.02 to Intermediate Twist Price.

(B) 1 lb. % Tubes—add \$.02 to 2 & 4 lb. % Tube Price.

## Color-Sealed

Denier & Filament	Zero Twist		Low Twist		Intermediate Twist	
	Tubes	Beams	Cones	Beams	2 & 4 Lb. % Tubes	4 & 6 Lb. % Tubes
55-18	\$1.245	\$1.315	\$1.32	\$1.35	\$1.35	\$1.37
75-24	1.18	1.28	1.29	1.32	1.32	1.34
100-32	1.14	1.24	1.23	1.26	1.26	1.28
150-40	1.03	1.06	1.06	1.07	1.10	1.11
200-64	1.00	1.01	1.02	1.04	1.05	1.06
300-80	.95	.97	.97	.98	1.00	1.01

(A) Regular Twist—Add \$.02 to Intermediate Twist Price.

## Black

Denier & Filament	Zero Twist		Low Twist		Intermediate Twist	
	Tubes	Beams	Cones	Beams	2 & 4 Lb. % Tubes	4 & 6 Lb. % Tubes
55-18	\$1.045	\$1.115	\$1.12	.....	.....	.....
75-24	.98	1.08	1.09	.....	.....	.....
100-32	.94	.....	1.03	.....	.....	.....
150-40	.83	.86	.86	.....	.....	.....
200-60	.80	.....	.81	.....	.....	.....
300-80	.75	.77	.77	.....	.....	.....
450-120	.....	.....	.75	.....	.....	.....
600-160	.....	.....	.73	.....	.....	.....
900-240	.....	.....	.73	.....	.....	.....

(A) Regular Twist (2.9 and 5 T.P.I.)—add \$.02 to Int. Twist Price.

(B) 1 lb. % Tubes—add \$.02 to 2 & 4 lb. % Tube Price.

## Specialty Yarns

Same Price as Regular Yarn  
Same Price as Regular Yarn

## Thick & Thin

Denier & Filament	Natural		Black		Color-Sealed
	Cones	Beams	Cones	Beams	Cones
200-64 Int. Twist	1.05	.....	\$1.15	.....	\$1.35
200-64 Reg. Twist	1.08	\$1.09	1.17	\$1.21	.....

Terms: Net 30 days. Subject to change without notice.  
Domestic Freight Terms are F.O.B. shipping point, freight prepaid our route to points east of the Mississippi River within the continental limits of the United States, for points west of the Mississippi River freight allowed to the Mississippi River crossing nearest purchaser's mill if shipped overland, or port of exit of purchaser's choice east of Mississippi River.

## Eastman Chemical Products, Inc.

Tennessee Eastman Co.

Effective December 21, 1956

## "Estron" Yarn, Bright or Dull — White

Denier & Filament	Regular Twist		Intermediate Twist		Low Twist		Zero Twist		Tricot Beams	
	Cones	Beams	Cones	Beams	Cones	Beams	Cones	Beams	Cones	Beams
55/13	\$1.06	\$1.04	\$1.02	\$1.05	\$1.08	\$1.09	\$1.02½	\$1.09	\$1.08½	.....
75/19	1.02	1.00	.98	1.01	.94	.95	.84	.95	.....	.....
75/49	1.04	1.02	.....	1.03	.....	.....	.....	.....	.....	.....
100/25	.97	.95	.93	.96	.89	.90	.81	.....	.....	.....
120/30	.88	.86	.84	.87	.80	.81	.....	.....	.....	.....
150/38	.79	.77	.....	.78	.72	.73	.69	.....	.....	.....
200/50	.75	.73	.....	.74	.69	.70	.....	.....	.....	.....
300/75	.71	.69	.....	.70	.65	.66	.63	.....	.....	.....
450/114	.69	.67	.....	.68	.63	.64	.....	.....	.....	.....
600/156	.67	.65	.....	.66	.62	.63	.63	.....	.....	.....
900/230	.65	.63	.....	.64	.....	.....	.61	.....	.....	.....
Heavier	.....	.....	.....	.....	.....	.....	.56	.....	.....	.....

Current Prices—December 19, 1955

## "Chromspun"—Standard Colors (Except Black)

Denier & Filament	Regular Twist		Intermediate Twist		Low Twist	
	Cones	Beams	Cones	Beams	Cones	Beams
55/13	\$1.39	\$1.40	\$1.37	\$1.38	\$1.31	\$1.32
75/19	1.36	1.37	1.34	1.35	1.28	1.29
100/25	1.30	1.31	1.28	1.29	1.22	1.23
150/38	.....	.....	1.11	1.12	1.06	1.07
300/75	.....	.....	1.01	1.02	.97	.98
450/114	.....	.....	.99	1.00	.95	.96
900/230	.....	.....	.94	.95	.....	.....

Current Prices

## "Chromspun"—Black

Denier & Filament	Regular Twist		Intermediate Twist		Low Twist & Spun Twist	
	Cones	Beams	Cones	Beams	Cones	Beams
55/13	\$1.19	\$1.17	\$1.17	\$1.18	\$1.12	\$1.12
75/19	1.16	1.14	1.14	1.15	1.09	1.09
100/25	1.10	1.08	1.08	1.09	1.03	1.03
150/38	.93	.91	.91	.92	.87	.87
200/50	.87	.85	.85	.86	.82	.82
300/75	.83	.81	.81	.82	.78	.78
450/114	.81	.79	.79	.80	.76	.76
900/230	.76	.74	.....	.75	.....	.....

Prices are subject to change without notice.

Prices on special items quoted on request.

Terms: Net 30 days. Payment—U. S. A. dollars.

Transportation charges prepaid or allowed to destination in the United States east of Mississippi River. Seller reserves right to select route and method of shipment. If Buyer requests and Seller agrees to a route or method involving higher than lowest rate Buyer shall pay the excess of transportation cost and tax.

\* "Estron" and "Chromspun" are trade-marks of the Eastman Kodak Co.

## RAYON STAPLE and TOW

American Viscose Corp.

Current Prices

Rayon Staple		Bright and Dull
Regular	.....	
Extra Strength	.....	\$ .31
1.0 Denier	.....	.34
"Viscose 32A"	.....	.36
"Avisco Crimped"	.....	.....
1.25 Denier	.....	.34
3.0 & 5.5 Deniers	.....	.32
8.0 & 15.0 Deniers	.....	.34
"Avisco Super L"	.....	.....
8.0, 15.0 & 22.0 Deniers	.....	.35
Short Staple Blend	.....	.33

## Rayon Tow

Grouped Continuous Filaments (200,000 Total Denier)	.....
1.5, 3.0 & 5.5 Denier Per Filament	.33
9.0 Denier Per Filament	.35
Grouped Continuous Filaments (4400/300 & 2000/1500)	.65
Prices of other descriptions on request.	.....
Terms: Net 30 days.	.....

## Celanese Corp. of America

Current Prices

Rayon Tow		Bright and Dull
1.5, 3, 5 D.P.F.	.....	
8 D.P.F.	.....	.35

## Courtaulds (Alabama) Inc.

Effective August 22, 1957

Rayon Staple		Bright	Dull
1½ and 3 denier	.....		
Available in 1½", 1-9/16" and 2".	.....	\$ .31	\$ .31

Crimped Rayon Staple		Bright	Dull
3 and 5½ denier	.....		
Available in 1-9/16" and 3".	.....	\$ .32	\$ .32
3 denier	.....	.....	.32
Available in 2".	.....	.....	.....
9/11/57	.....	.....	.....

# 20th SOUTHERN TEXTILE EXPOSITION

October 6-10, 1958

Textile Hall—Greenville, South Carolina

LARGER—over 16,000 square feet of additional space.

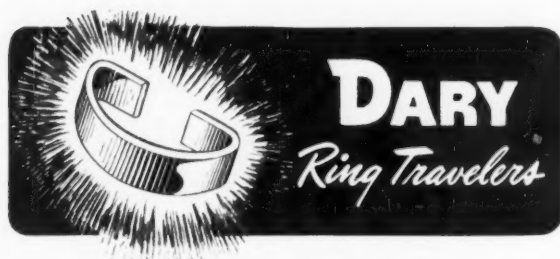
WIDER VARIETY OF EXHIBITS—heavy basic machinery, materials handling and other equipment, supplies and processes.

IN ONE CONVENIENT LOCATION—essentially everything of importance to top executives as well as those concerned with research, purchasing and production.

Room Reservations should be made in advance to

**TEXTILE HALL CORPORATION**  
GREENVILLE, SOUTH CAROLINA

"An Institution of the Textile Industry Since 1915"

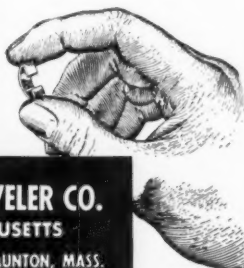


## OUR SPECIALTY!

Our specialty is making Dary ring travelers—an item well and favorably known to the textile trade for more than half a century. Though times change, we at Dary hold to one course without deviation. We continue to serve, by pursuing our specialty.

When you need ring travelers, call on our experience to aid your choice. Consult your friendly Dary representative!

Always specify  
DARY Ring Travelers

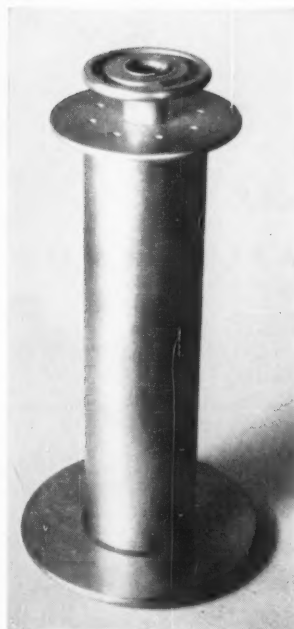


### THE DARY RING TRAVELER CO. TAUNTON, MASSACHUSETTS

LINDSEY I. PHILLIPS, TREASURER, TAUNTON, MASS.  
JOHN H. O'NEILL, BOX 720, ATLANTA, GA.  
JAMES H. CARVER, BOX 22, RUTHERFORDTON, N. C.  
CRAWFORD "JACK" RHYMER, BOX 2261, GREENVILLE, S. C.



## N E W



### LOW COST ALUMINUM TWISTER BOBBIN

New aluminum twister bobbin of high strength will not warp or fail despite repeated steamings of highest strength nylon yarns. Of two pound capacity, this new bobbin is dynamically balanced and anodized against corrosion yet is less costly than ordinary bobbins. Spindle guide tube goes all the way through. Grip knob with identification ring simplifies handling without need to touch yarn. Available in a variety of sizes. Write for details today.



ALLENTOWN BOBBIN WORKS, INC.  
ALLENTOWN PENNSYLVANIA

## "Coloray" Spun Dyed Rayon Staple

	1 1/2 Den. 1-1/16"	3 Den. 2"	Price per Lb.
(Code numbers for color and denier)			
Black	1404	1419	37c
Tan	8004	8019	39c
Medium Brown	8804	8819	39c
Silver Grey	1004	1019	39c
Mocha	7704	7719	39c
Dark Brown	8604	8619	40c
Ecu	7904	7919	40c
Slate Grey	0804	0819	43c
Light Blue	4004	4019	44c
Sulphur	2004	2019	44c
Nugget	2304	2319	44c
Apple Green	5104	5119	45c
Aqua	4704	4719	45c
Rose	5804	5819	45c
Sage	5304	5319	45c
Crystal Blue	3904	3919	45c
Peacock Blue	4604	4619	46c
Medium Blue	4204	4219	46c
Dark Blue	4404	4419	46c
Hunter Green	5404	5419	49c
Indian Yellow	2504	2519	49c
Pink	6004	6019	50c
Dawn Pink	5904	5919	50c
Turquoise	4804	4819	50c
Malachite Green	5204	5219	51c
Red	7004	7019	56c

(In addition to the above, Black is also available in:

1 1/2 den. 1 1/4" (1401) 3 den. 1-9/16" (1416)

3 den. 1 1/2" (1413) 3 den. 2 1/4" (1420)

Terms: Net 30 days f.o.b. LeMoyne, Alabama. Minimum transportation allowed to points in U.S.A. east of Mississippi River.

## The Hartford Rayon Co.

Div. Bigelow-Sanford Carpet Co., Inc.

### Rayon Staple

Effective January 1, 1958

#### REGULAR

1 1/2 denier Bright	
1 1/2 denier Dull	.31
5 1/2 denier Bright	
1 1/2", 3" and 4 1/2"	.32

#### VISCALON 66 (Crimped)

8 denier 3" Bright	.34
15 denier 3" Bright	.34
15 denier 3" Dull	.34

#### "KOLORBON"—Solution Dyed Rayon Staple—3" and 6"

	8 Denier Bright	15 Denier Dull	15 Denier Bright
Cloud Grey	45c	45c	
Sandalwood	45c	45c	
Nutria	45c	45c	
Sea Green	45c	45c	
Mint Green	45c	45c	
Champagne	45c	45c	
Cafe Brown	55c		55c
Midnight Black	45c		45c
Gold	48c	48c	
Turquoise	45c	45c	
Melon	48c	48c	
Capri Blue	45c	45c	
Charcoal Grey	45c	45c	
Coco	46c	46c	
Sable	47c		47c
Tangerine	58c		58c
Chinese Red	59c		59c
Larkspur Blue	45c	45c	
Royal Blue	55c		55c
Lemon Peel	46c	46c	46c
Kelly Green	46c	46c	46c
Bitter Green	55c		55c

Terms: Net 30 days. Prices are quoted f.o.b. shipping point, lowest cost of transportation allowed, or prepaid. To points West of the Mississippi, lowest cost of transportation allowed to the Mississippi River crossing.

## ACETATE STAPLE and TOW

### Celanese Corp. of America

#### Current Prices

#### Staple

Celanese Acetate Staple	Bright & Dull
3, 5.5 & 8 Denier (Regular Crimp or High Crimp)	.34
2, 12 & 17 Denier (Regular Crimp or High Crimp)	.35
35 Denier	.40
50 Denier	.35
Type F—5.5, 8, 12, 17 Denier	.35
Type K—(Available under Celanese License Agreement)	.39
% to % length (All Deniers)	.03 (premium)
Variable Acetate Fiber	.32
35 Denier Flat Filament Acetate	.40
Non-Textile Acetate Fibers	.27*

#### Tow (Celatow)

3, 5.5 & 8 Denier	.36
2, 12 & 17 Denier	.37
35 Denier	.40
50 Denier	.42

Terms: Net 30 days. Shipments prepaid to any destination in U.S.A. east of the Mississippi River. Shipments west of the Mississippi will be made on a collect freight basis and allowance will be made for the lowest transportation cost to the point of river crossing.

Prices subject to change without notice.

All previous prices withdrawn.

\* No transportation allowed (F.O.B. shipping point).

Prices on unlisted items can be obtained upon request.

Orders are subject to conditions of sale appearing on our acknowledgments of orders.

## NON CELLULOSIC YARN NYLON

### Allied Chemical and Dye Corporation

#### Caprolan®†

Effective December 3, 1957

Denier	Fila- ment	Turn/ In.	Twist	Type**	Package	1st Grade Price/Lb.
560	32	1	Z	HB	Aluminum Tube	\$1.39
840	136	1/2	Z	HBT	Aluminum Tube	1.30
840	136	1/4	Z	HBT	Beams	1.30
<b>Heavy Yarn</b>						
2100	408	0	O	HB	Paper Tube*	\$1.27
2100	112	0	O	HB	Paper Tube*	1.30
2500	408	0	O	HB	Paper Tube*	1.27
3360	544	0	O	HB	Paper Tube*	1.26
4200	680	0	O	HB	Paper Tube*	1.26
4200	224	0	O	HB	Paper Tube*	1.29
5000	816	0	O	HB	Paper Tube*	1.25
5000	280	0	O	HB	Paper Tube*	1.28
5800	952	0	O	HB	Paper Tube*	1.25
7500	1224	0	O	HB	Paper Tube*	1.24
10000	1632	0	O	HB	Paper Tube*	1.24
15000	2448	0	O	HB	Paper Tube*	1.23

Terms—Net 30 days.

Prices subject to change without notice.

All prices quoted F.O.B. Shipping Point.

Following are invoiced as a separate item.

Bobbins—45 cents each.

Aluminum Tubes—40 cents each.

Beams—\$220.00 each.

Cradles for Beams—\$53.00.

\* Paper Tubes non-returnable, no charge.

\*\* Type is used to describe luster and tenacity

Lowest freight cost prepaid or allowed east of Mississippi River, for points west of the Mississippi River freight allowed to the Mississippi River crossing nearest purchaser's mill if shipped overland, or port of purchase of choice east of Mississippi River.

† Allied Chemical's polyamide fiber.

## American Enka Corporation

### Nylenka Filament Yarn Prices

Effective June 1, 1957

Denier & Filament	Twist	Luster	Tenacity	Package	Yarn Weight per Package	Price per Pound, Std.	Price per Pound, Sub.
15/1	0.5Z	Semi-dull	Normal	Pirn	1 lb.	\$5.25	\$5.00
15/2	0.5Z	Semi-dull	Normal	Pirn	1 lb.	5.50	5.25
15/1	0.5Z	Dull	Normal	Pirn	1 lb.	5.30	5.05
20/2	0.5Z	Semi-dull	Normal	Pirn	1 lb.	4.60	4.30
30/6	0.5Z	Semi-dull	Normal	Pirn	2 lb.	2.36	2.21
40/8	0.5Z	Semi-dull	Normal	Pirn	2 lb.	2.01	1.81
50/13	0.5Z	Semi-dull	Normal	Pirn	2 lb.	1.91	1.76
200/16	0.9Z	Bright	Normal	Cone	4 lb.	1.49	1.44
200/16	0.5Z	Bright	Normal	Beam		1.54	
200/34	0.9Z	Bright	Normal	Cone	4 lb.	1.49	1.44
200/34	0.5Z	Bright	Normal	Beam		1.54	

Pirns charged at \$25 or \$45 each, depending upon type. Deposit

refunded upon return of pirn in good condition. Cones are non-returnable.

Beams and cradles are deposit carriers and remain property of

American Enka Corporation.

Terms: Net 30 days. Minimum common carrier transportation

charges will be prepaid and absorbed to the first destination on or

east of the Mississippi River. In prepaying transportation charges,

seller reserves the right to select the carrier used.

## The Chemstrand Corp.

### Current Prices

Effective December 19, 1956

Denier	Filament	Twist	Type*	Package	Standard	Second
10	1	O	SD	Bobbins	\$8.42	\$7.81
15	1	O	SD	Bobbins	5.25	5.00
15	1	O	D	Bobbins	5.30	5.00
15	1	O	D	Spools	5.41	
30	10	Z	SD	Bobbins	2.36	2.21
30	10	Z	HSD	Bobbins	2.36	2.21
30	26	Z	SD	Bobbins	2.49	2.21
40	7	Z	SD	Bobbins	2.11	1.81
40	13	Z	SD	Bobbins	2.01	1.81
40	13	Z	SD	Spools	2.11	
40	13	Z	D	Bobbins	2.06	1.81
50	17	Z	D	Spools	2.16	
50	17	Z	SD	Bobbins	1.91	1.76
70	34	Z	SD	Bobbins	1.71	1.66
70	34	Z	B	Bobbins	1.71	1.66
70	34	Z	D	Spools	1.86	
80	26	Z	SD	Bobbins	1.71	1.56
100	34	Z	SD	Bobbins	1.65	1.60
100	34	Z	HB	Bobbins	1.70	1.60
140	60	Z	SD	Bobbins	1.60	1.55
200	34	Z	B	Bobbins	1.49	1.44
200	68	Z	SD	Bobbins	1.56	1.46
210	34	Z	HB	Bobbins	1.49	1.44
210	34	Z	HB	Spools	1.54	
210	34	Z	HB	Beams	1.54	
280	17	Z	HB	Bobbins	1.49	1.39
280	17	Z	HB	Spools	1.54	
420	68	Z	HB	Bobbins	1.39	1.29
630	102	Z	HB	Bobbins	1.39	1.29
840	136	Z	HB	Tubes	1.34	1.24
840	140	Z	HB	Beams	1.30	1.20
840	140	Z	HB	Tubes	1.30	1.20

\*Types: D—Dull; SD Semi-dull; B—Bright; H—High tenacity.

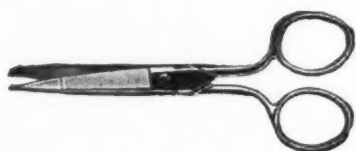
Bobbins are invoiced at 40¢ each, depending on type; tubes are invoiced at 40¢ each; spools invoiced at \$77.00 and \$95.00 depending on type; and beams and crates for beams are invoiced at \$220 and \$25 respectively.

Prices subject to change without notice.

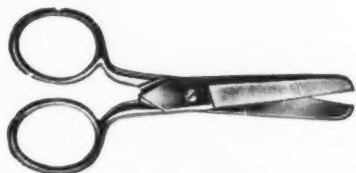


# MILL SCISSORS

(Forged Steel)



No. 100 — (Only Size 4")



No. 200 — (Sizes 3½", 4" and 5")

For over 35 years Collins has been a leading supplier of dependable Mill Scissors to Textile Mills.

**COLLINS SUPPLY & EQUIPMENT CO.**  
1357-97 Monsey Ave. Scranton 2, Pa.

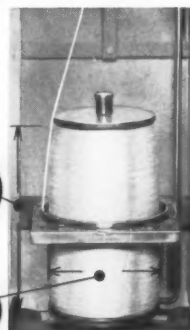
# BIG 5 POUND PACKAGE FLETCHER DUPLEX TWISTER

Especially for  
TEXTURED AND  
SYNTHETIC YARNS

PROVE IT WITH  
3-MONTH RENTAL  
PLAN BEFORE  
YOU PURCHASE

22 SPINDLE MACHINES  
SHIPPED COMPLETELY  
ERECTED

IMMEDIATE DELIVERY



STANDARD 72 SPINDLE MACHINE FOR VOLUME PRODUCTION

*The New Fletcher Works*  
209 GLENWOOD AVENUE PHILADELPHIA 40, PA.

**for superior  
finishes...  
complete removal  
of size is a  
first essential**

# RAPIDASE<sup>®</sup>

UNEQUALLED FOR DE-SIZING AT HIGHEST TEMPERATURES AND AT HIGHEST SPEEDS

In concentrations to meet every requirement  
... in liquid or powder form ... RAPIDASE is  
universally used for cottons and all fabrics  
containing man-made fibres.

**WALLERSTEIN COMPANY, INC., 180 Madison Avenue, New York 16, N. Y.**

## E. I. du Pont de Nemours & Co.

Textile Fibers Dept.  
Current Prices

### Nylon Yarn

Denier & Filament	Turns/Inch & Twist	Type	Package	1st Grade	2nd Grade
7-1	0	200	Bobbin	\$9.47	\$8.82
10-1	0	200	Bobbin	8.42	7.82
12-1	0	200	Bobbin	7.35	6.85
15-1	0	200	Tricot Bms.	5.36	5.00
15-1	0	200	Bobbin	5.25	5.00
15-1	0	680	Tricot Bms.	5.41	5.00
15-1	0	680	Bobbin	5.30	5.00
15-1	0	200	Bobbin	4.42	4.12
20-1	0	200	Bobbin	2.91	2.61
20-7	0.5Z	200	Tricot Bms.	3.02	2.61
20-7	0.5Z	680	Bobbin	2.96	2.61
20-7	0.5Z	680	Tricot Bms.	3.07	2.61
20-20	0.7Z	209	Bobbin	6.00	2.21
30-10	0.5Z	200	Bobbin	2.36	2.21
30-10	0.5Z	200	Tricot Bms.	2.46	2.21
30-10	0.5Z	680	Bobbin	2.51	2.21
30-10	0.5Z	680	Tricot Bms.	2.49	2.21
30-26	0.5Z	200	Bobbin	2.11	1.81
40-7	0.5Z	200	Bobbin	2.11	1.81
40-13	0.5Z	200	Bobbin	2.01	1.81
40-13	0.5Z	200	Tricot Bms.	2.11	1.81
40-13	0.5Z	200	Bobbin	2.13	1.90
40-13	0.5Z	680	Bobbin	2.41	1.81
40-13	0.5Z	680	Tricot Bms.	2.16	1.81
40-34	0.5Z	200	Bobbin	2.21	1.81
50-10	0.5Z	200	Bobbins	2.11	1.76
50-17	0.5Z	200	Bobbin	1.91	1.76
50-17	0	200	Tubes	1.91	1.76
50-17	0.5Z	680	Bobbin	2.01	1.76
70-17	0.5Z	200	Bobbin	1.71	1.66
70-34	0	100	Tubes	1.71	1.66
70-34	0.5Z	100/200	Bobbin	1.71	1.66
70-34	0	200	Tubes	1.71	1.66
70-34	0.5Z	300	Bobbin	1.76	1.66
70-34	0.5Z	680	Bobbin	1.76	1.66
70-34	0	680	Tubes	1.76	1.66
80-26	0.5Z	200	Bobbin	1.71	1.56
90-44	0.5Z	200	Bobbin	1.86	1.76
100-34	0.5Z	200	Bobbin	1.65	1.60
100-34	0.5Z	300	Bobbin	1.70	1.60
100-34	0	300	Tubes	1.70	1.60
100-34	0.5Z	680	Bobbin	1.70	1.60
100-50	0.5Z	200	Bobbin	1.71	1.60
140-68	0.5Z	100	Bobbins	1.60	1.55
140-68	0	200	Tubes	1.60	1.55
140-68	0.5Z	200	Bobbin	1.60	1.55
140-68	0.5Z	300	Bobbin	1.65	1.55
200-34	0	100	Tubes	1.49	1.44
200-34	0.7Z	100	Bobbin	1.49	1.44
200-34	0.7Z	680	Bobbin	1.54	1.44
200-68	0.7Z	200	Bobbin	1.56	1.46
210-34	0	300	Bobbin	1.49	1.44
210-34	0.7Z	300	Bobbin	1.49	1.44
210-34	0.7Z	300	Beam	1.54	1.44
210-34	0.7Z	330	Bobbin	1.59	1.44
260-17	1Z	300	Bobbin	1.49	1.39
400-68	0.7Z	100	Bobbin	1.39	1.29
420-68	1Z	300	Bobbin	1.39	1.29
780-51	1Z	300	Bobbin	1.39	1.29
800-140	0.5Z	100	Bobbin	1.39	1.29
840-140	0.5Z	300/700	Al. Tbs	1.30	1.20
840-140	0.5Z	300/700	Beam	1.30	1.20

Color-Sealed Yarn	Denier & Filament	Turns/Inch & Twist	Type	Package	1st Grade	2nd Grade
30-10	0	0.5Z	140	Bobbin	\$2.71	\$2.56
40-13	0	0.5Z	140	Bobbin	2.36	2.16
70-34	0	0.5Z	140	Bobbin	2.06	2.01
100-34	0	0.5Z	140	Bobbin	2.00	1.95
100-34	0	0	140	Tubes	2.00	1.95
200-34	0	0.7Z	140	Bobbin	1.84	1.79
260-17	1Z	140	Bobbin	1.84	1.79	

Industrial Yarn	Denier & Filament	Turns/Inch & Twist	Type	Package	Price/Lb.
2520-420	0	0	300/700	Paper Tube	\$1.27
4200-700	0	0	300/700	Paper Tube	1.25
5040-840	0	0	300/700	Paper Tube	1.25
7560-1260	0	0	300/700	Paper Tube	1.24
10080-1680	0	0	300/700	Paper Tube	1.24
15120-2520	0	0	300/700	Paper Tube	1.23

These prices are subject to change without notice. Terms: Net 30 Days.

### Types

- Type 100—Bright, normal tenacity.
- Type 140—Bright, color-sealed, black, normal tenacity.
- Type 200—Semidull, normal tenacity.
- Type 209—Semidull, normal tenacity.
- Type 300—Bright, high tenacity.
- Type 330—Bright, high tenacity, more heat & light resistant.
- Type 400—Semidull, high tenacity.
- Type 680—Dull, normal tenacity.
- Type 700—Bright, high tenacity.

Freight Terms—Terms are F.O.B. shipping point, freight prepaid our route to points east of the Mississippi River within the continental limits of the United States, for points west of the Mississippi River freight allowed to the Mississippi River crossing nearest purchaser's mill if shipped overland, or port of exit of purchaser's choice east of Mississippi River.

Following are invoiced as a separate item.  
Bobbins—25 cents or 45 cents depending on type  
Aluminum Tube—40c each  
Draw Winder Tubes—\$70 or \$1.00 depending on type  
Tire Cord Beams—\$220.00 each  
Cradles for Tire Cord Beams—\$115.00 each  
Tricot Beams—\$95.00 each  
Cradles for Tricot Beams—\$130.00 each  
(Beams and Cradles are deposit carriers and remain the property of E. I. du Pont de Nemours & Co., Inc.)

## POLYESTER E. I. du Pont de Nemours & Co.

Textile Fibers Dept.  
Current Prices

### "Dacron"

Denier & Filament	Turns/Inch	Luster	Type*	1st Gr.	2nd Gr.
30-14	0	Bright	55	\$2.81	
40-27	0	Semidull	56	2.41	
40-27	0	Bright	57	2.41	
40-27	0	Dull	57	2.46	
70-34	0	Semidull	56	2.01	
70-14	0	Bright	55	2.01	
70-34	0	Bright	55	2.01	
70-34	0	Dull	57	2.06	
100-34	0	Semidull	56	1.94	
140-28	0	Bright	55	1.89	
150-34	0	Semidull	56	1.91	
220-50	0	Bright	51	1.84	
250-50	0	Bright	55	1.86	
1100-250	0	Semidull	59	1.50	
1100-250	0	Bright	51	1.50	

Terms: Net 30 Days.  
Domestic Freight Terms are F.O.B. shipping point, freight prepaid our route to points east of the Mississippi River within the continental limits of the United States, for points west of the Mississippi River freight allowed to the Mississippi River crossing nearest purchaser's mill if shipped overland, or port of exit of purchaser's choice east of Mississippi River.

### Yarn Types

\* Type:

- Type 51—Bright, high tenacity.
- Type 55—Bright, normal tenacity.
- Type 56—Semidull, normal tenacity.
- Type 57—Dull, normal tenacity.
- Type 59—Semidull, high tenacity.

Tubes are invoiced as a separate item at \$.70 each.  
All tubes are returnable for credit.  
\* "DACRON" is DuPont's registered trade-mark for its polyester fiber.

## SARAN FIBERS

The Saran Yarns Company — Odenton, Maryland

The Hall Company (Selling Agent)

41 East 42 Street, New York 17, N. Y. (Oxford 7-8996)

Current Prices:

CONTINUOUS FILAMENT	Type	Twist p. l.	Natural	Colors
1240/10	3		\$1.32	\$1.37
750/20**	3		1.75	1.80

\*\* For filter fabrics and other industrial purposes only.  
F.O.B. Odenton, Maryland.  
Terms: Net 30 days.

## NON CELLULOSIC STAPLE & TOW

ACRYLIC

The Chemstrand Corp.

Current Prices

### "Acrilan"

Effective October 1, 1957

	Regular Acrilan	Acrilan 16
2.0 denier Semi-Dul and Bright staple & tow	\$1.24	\$1.24
2.5 denier Hi-Bulk Bright and Semi-dull staple and tow	1.16	1.16
3.0 denier Bright & Semi-dull staple & tow	1.16	1.16
5.0 denier Bright & Semi-dull staple & tow	1.16	1.16
8.0 denier Bright & Semi-dull staple	1.16	1.16
15.0 denier Bright & Semi-dull staple	1.01	1.05

Terms: Net 30 days. Freight prepaid to points east of the Mississippi River.

## Union Carbide Chemicals Co.

Div. Union Carbide Corp.

Textile Fibers Dept.

Effective October 1, 1957

### Dynel Staple & Tow

Natural Dynel	
3, 6, and 12 Denier, Staple and Tow	\$1.10 per lb.
24 Denier, Staple and Tow	1.05 per lb.
Dynel Spun with Light Colors:	
Whitened, Blond, or Gray	
3, 6, and 24 Denier, Staple and Tow	1.30 per lb.
Dynel Spun with Dark Colors:	
Black, Charcoal, and Brown	
3, 6, and 24 Denier, Staple and Tow	1.40 per lb.
Dynel Type 63 Bulking Fiber (3 Denier only)	Add \$.05 per lb. to above prices

Prices are quoted f.o.b. South Charleston, W. Va.

## E. I. du Pont de Nemours & Co.

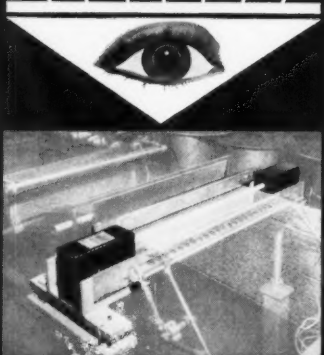
Textile Fibers Dept.

Current Prices

### "Orlon"\*\*\* Acrylic Staple & Tow

Type 42	1st Grade
1.0 Denier Semidull & Bright—Staple only	\$1.48
2.0 Denier Semidull & Bright	1.33
3.0 Denier Semidull & Bright	1.28
3.0 Denier Semidull Color-sealed Black	1.63
6.0 Denier Semidull & Bright	1.20
6.0 Denier Color-sealed Black	1.55
4.5 Denier Semidull	1.20
10.0 Denier Semidull	1.20

*Automatically*



**100%  
YARN  
INSPECTION**

## ...with the Lindly Automatic Yarn Inspector

Take all the guesswork out of yarn inspection with the new standard of yarn quality—THE LINDLY COUNT.

The Lindly Automatic Yarn Inspector counts **every** fault...provides a stop motion, set to **your** tolerances. You determine quality, measure it in terms of THE LINDLY COUNT.

Lindly Automatics pay for themselves in a short time, go on adding to your profits for years.

Inquire about the family of Lindly Automatics, built to cut your costs, boost your quality.

It Pays to Know  the Lindly Count

**LINDLY & COMPANY, INC.**  
248 HERRICKS ROAD  
MINEOLA, NEW YORK

(Continued from Page 75)

**Willard K. Sawyer** has been appointed assistant divisional sales manager for Fabulized, Inc.'s southern office.

**Whitney Stevens** has been appointed assistant to J. P. Stevens, Jr. and will be succeeded in his post as head of the Slactex Department by **Arthur S. Sobel**.

**Robert I. Dalton, Jr.** has been transferred from Whitin Machine Works' Charlotte office to the company's main office in Whitinsville and **J. Lawrence Orr** will assume Mr. Dalton's previous position.



Kenneth A. Mack

**Kenneth A. Mack** has been appointed vice president in charge of the Chemical Machinery Division of Baker Perkins, Inc. He will retain his position as sales manager of the division.

**Alfred Greenfield** has been appointed manager of merchandising and **James A. Jones, Jr.**, manager of field sales for Dow Chemical Co.'s textile fiber, Zefran.

**Eric C. Huggins** has been appointed manager of Dow's new foreign sales office in Hong Kong, and **Howard C. Visger**, manager of the company's Tokyo office, succeeding the late **H. Lee Clack**.

### Deaths

**John Leshner**, founder of the Bestok Underwear Co., died recently at the age of 89.

**Albert T. Matthews**, former general manager of B. F. Goodrich Textile Products, has died at the age of 80.

**Albert E. Cleghorn**, president National Aniline Division of the Allied Chemical and Dye Corp., died of a heart attack January 10th. His age was 52. He was appointed president last Oct. 21 and assumed charge of the Division on November 1st. Mr. Cleghorn came to Allied in 1933 and was assigned to National Aniline in 1952.

**Ralph A. Rhodes**, vice president of the Bigelow-Sanford Carpet Co., in charge of its Sanford Division, 295 Fifth Ave., New York City, died in Chicago January 10 of a heart attack. He was 42 years of age.

**JACOBS**

**ONLY  
THE  
"Verybest"  
IS GOOD  
ENOUGH**

Jake Jacobs says —

"'Verybest' means just what it says: the very best in modern loom necessities for today and tomorrow."



THE BULLARD CLARK COMPANY

**JACOBS**

**SOUTHERN  
DIVISION**  
Charlotte, N. C.

**NORTHERN  
DIVISION**  
Danielson, Conn.

Tow—Total Denier 470,000

Staple Lengths—1½", 2", 2½", 3", 4½"

High Shrinkage Staple same price as Regular Staple

**Type 39**  
This product is designed for woolen system spinning and is a blend of deniers (average 4.2) with a variable cut length. **\$1.06**

**Type 39A**  
This product is designed for woolen system spinning and is a blend of predominately fine deniers (average 2.4) with a variable cut length. **\$1.01**

**Type 39B**  
This product is designed for woolen system spinning and is a blend of predominately heavy deniers (average 6.5) with a variable cut length. **\$1.01**

F.O.B. Shipping Point—Freight prepaid our route to points east of the Mississippi River within the continental limits of the United States, for points west of the Mississippi River freight allowed to the Mississippi River crossing nearest purchaser's mill if shipped overland, or port of exit of purchaser's choice east of Mississippi River.

Terms: Net 30 Days.

\*\* "ORLON" is DuPont's registered trade-mark for its acrylic fiber.

**Eastman Chemical Products, Inc.**

**Tennessee Eastman Co.**

Effective November 15, 1956

"Verel"™

Deniers

2, 3, 5 and 8

Dull and Bright

\$1.10 per pound

Prices are subject to change without notice.

Terms: Net 30 days. Payment—U. S. A. dollars.

Transportation charges prepaid or allowed to destination in the United States east of the Mississippi River. Seller reserves the right to select route and method of shipment. If buyer requests and seller agrees to a route or method involving higher than lowest rate buyer shall pay the excess of transportation cost and tax.

\* "Verel" is a trade-mark of the Eastman Kodak Co.

**NYLON**

**American Enka Corp.**

Nylenka (Nylon Six Staple)

Denier	Luster	Length (Inches)	Price per pound
3	semi-dull	1½, 1½, 2, 2½, 3, 4½	\$1.28
6	bright	3, 4½	1.28
8	bright	2½, 3, 4½	1.20
10	bright	3	1.20
15	bright	3	1.20
15	semi-dull	3	1.20

Deniers and lengths of staple not listed above are available upon special request.

Terms: Net 30 days. Minimum common carrier transportation charges will be prepaid and absorbed to the first destination on or east of the Mississippi River. In prepaying transportation charges, seller reserves the right to select the carrier used.

**E. I. du Pont de Nemours & Co.**

Textile Fibers Dept.

Current Prices

Nylon Staple and Tow

Denier	Type	Staple Lengths	Tow Bundle	1st. Grade Price/Lb.	2nd Grade Staple Only
1.5	200	1½"—4½"	None made	\$1.33	\$1.13
1.5	201	1½"—4½"	None made	1.35	1.20
3.0	100/200	1½"—4½"	430M	1.28	1.13
3.0	101/201	1½"—4½"	455M	1.30	1.15
6.0	100	1½"—4½"	330M	1.28	1.13
6.0	101	1½"—4½"	345M	1.30	1.15
15.0	100	1½"—6½"	425M	1.20	1.05
15.0	101	1½"—6½"	None made	1.22	1.07
15.0	600	1½"—6½"	425M	1.22	1.07
15.0	601	1½"—6½"	None made	1.24	1.09

Staple lengths are restricted to the range shown opposite each denier above. The actual cut lengths within these ranges are as follows:

1½, 1½, 2, 2½, 3, 4½ and 6½

Types

Type 100 Bright, normal tenacity, not heatset.

Type 101 Bright, normal tenacity, heatset.

Type 200 Semidull, normal tenacity, not heatset.

Type 201 Semidull, normal tenacity, heatset.

Type 600 Dull normal tenacity, not heatset.

Type 601 Dull normal tenacity, heatset.

These prices are subject to changes without notice.

Terms—Net 30 Days.

Freight Terms—Terms are F.O.B. shipping point, freight prepaid our route to points east of the Mississippi River within the continental limits of the United States, for points west of the Mississippi River freight allowed to the Mississippi River crossing nearest purchaser's mill if shipped overland, or port of exit of purchaser's choice east of Mississippi River.

**Industrial Rayon Corp.**

Effective November 29, 1956

Nylon Staple

1.5 denier	\$1.33 per lb.
2, 3 and 6 denier	1.28 per lb.
8 and 15 denier	1.20 per lb.

Bright and semi-dull, required length.

Terms: Net 30 days f.o.b. point of shipment; title to pass to buyer on delivery of goods to carrier. Domestic transportation charges prepaid with transportation allowed at lowest published rate to all points east of the Mississippi River.

**POLYESTER**

**E. I. du Pont de Nemours & Co.**

Textile Fibers Dept.

Current Prices

"Dacron"™ Staple and Tow

Denier	Luster	Type	Length	Tow Bundle	1st Gr.
1.25	Semidull	54	1½"-3"	....	\$1.56

1.5	Semidull	54	1½"-3"	375M-	1.51
3.0	Semidull	54	1½"-4½"	500M	1.41
4.5	Semidull	54	1½"-4½"	375M-	1.41
6.0	Semidull	54	1½"-4½"	500M	1.41

Terms: Net 30 Days.

F. O. B. Shipping Point—Freight prepaid our route to points east of the Mississippi River within the continental limits of the United States, for points west of the Mississippi River freight allowed to the Mississippi River crossing nearest purchaser's mill if shipped overland, or port of exit of purchaser's choice east of Mississippi River.

**POLYVINYL ACETATE**

**American Viscose Corp.**

Effective October 1, 1956

"Vinyon"™ Staple

3.0 denier	½" unopened	\$ .80 per lb.
3.0 "	1¼" unopened	.80 per lb.
3.0 "	1¼" opened	.90 per lb.
3.0 "	2" opened	.90 per lb.
3.0 "	2" unopened	.80 per lb.
5.5 "	1" opened	.90 per lb.
5.5 "	3¼" opened	.90 per lb.
5.5 "	3¼" unopened	.80 per lb.

Terms: Net 30 days.

**PROTEIN**

**Virginia-Carolina Chemical Corp.**

Fiber Division

Effective January 15, 1951

"Vicara"™ Staple

Denier	Standard Crimp	Highly Crimped
3 Denier	\$1.00 per lb.	\$1.05 per lb.
5 Denier	1.00 per lb.	1.05 per lb.
7 Denier	1.00 per lb.	1.05 per lb.

Bleached "Vicara"™ Staple

Denier	Standard Crimp	Highly Crimped
3 Denier	\$1.10 per lb.	\$1.15 per lb.
5 Denier	1.10 per lb.	1.15 per lb.
7 Denier	1.10 per lb.	1.15 per lb.

Staple length ½ to 6 in.

Supplied in staple lengths or as continuous tow (270,000 filaments).

Terms: Net 30 days.

Prices f.o.b. Taftville, Conn. on 10% moisture regain basis.

**SARAN FIBERS**

**The Saran Yarns Company — Odenton, Maryland**

The Hall Company (Selling Agent)

41 East 42 Street, New York 17, N. Y. (Oxford 7-8996)

Current Prices:

Saran Staple

Type	Denier	Natural	Colors
2N	22	\$0.70	\$0.75
2N	16	.74	.79
3C*	22	.63	.67

In any staple length 1½ to 6". Also 45 denier, 7" cut.

\* For carpets and industrial fabrics.

**METALLICS**

**Fairtex Corporation**

1808 Liberty Life Building

Charlotte 2, N. C.

December 18, 1957

1. Fairtex No. 260 (butyrate)—gold, silver and copper.

Width	Yield (Per Pound)	Price (Per Pound)
1/120"	21,000	\$4.75
1/80"	13,000	4.00
1/64"	10,800	3.35
1/50"	8,400	3.25
1/32"	5,300	3.00
1/16"	2,600	2.85
1/8"	1,300	2.70

2. Fairtex with Mylar\* No. 100V (2 ply), (metallized type)—silver only.

1/100"	48,000	\$13.25
1/80"	37,000	11.40
1/64"	31,000	11.00
1/50"	24,200	10.75
1/32"	15,500	10.40

Fairtex with Mylar\* No. 150V (3 ply), (metallized type)—gold, silver and copper.

1/100"	32,000	\$10.65
1/80"	25,000	9.25
1/64"	21,000	8.85
1/50"	16,400	8.60
1/32"	10,500	8.25

3. Fairtex with Mylar\* No. 150F, (foil type)—gold, silver and copper.

1/100"	28,000	\$7.75
1/80"	21,450	7.00
1/64"	17,200	5.95
1/50"	13,400	5.80
1/32"	8,600	5.65
1/16"	4,300	5.50

4. General Information:

- Staple available upon request on above types.
- Above types also available supported with Nylon, Fortisan or other synthetics.
- Colors available on above upon request. \$.10 per pound additional.
- Quantity discounts on above prices.
- Fairtex is supplied on 1 lb. disposable spools—48 spools per



## Yarns from Foam Material

German textile experts have succeeded for the first time in making a yarn from foam material. Fabrics made from the new yarn have already appeared on the German market, basic patents have been applied for in all industrial countries in the world.

In the manufacturing process of the new material known as Moltopen the ingredients combined with a necessary activator flow from a mixing vessel into a container. After a short time the light brown liquid mixture slowly rises, in a similar way to bread when it is baked, until the chemical reaction is completed, when a solidified foam remains.

For the manufacture of the foam yarn, completely new machines had to be designed. It was not easy to make from a block of solidified foam filaments in lengths of at least several hundred yards without knotting or sticking them together. But after a considerable amount of research a satisfactory method was evolved and production started.

Among the advantages claimed for Moltopen are extreme light weight and good insulation properties. It can be combined with cotton, nylon, perlon and other fibers to form garments which are very light and warm. The yarn is reported to have great elasticity and the finished product is claimed to have a superior "feel" which makes it suitable for ladies' coats and suits. The owner of the new process is Deutsche Schaumfaden-Werke E. H. Placking, Wuppertal-Lanfeld, German Federal Republic.

## Du Pont Gets Polyethylene Patent

The Du Pont Co. has been issued U. S. patent, No. 2,816,883, covering linear polyethylene, a type of plastic that several other companies have been producing or planning to manufacture. The patent is one of a group of ethylene polymerization patents applied for by Du Pont during the years 1947 to 1951 and recently granted. Du Pont has taken the position that it is the only company entitled to license the manufacture of linear polyethylene. Industry quarters believe output of this plastic will rise to 230,000,000 pounds annually by the end of 1958 and to at least 500,000,000 pounds by 1960.

Officials of other firms producing the plastic said they were studying the situation. Companies making linear polyethylene include Celanese Corp. of America, Phillips Chemical Co. and Hercules Powder Co. Those planning to produce it include W. R. Grace & Co., Union Carbide Corp., Koppers Co., and Dow Chemical Co.

## New Roberts Orders

Roberts Co., Sanford, N. C., has been awarded two contracts by Canadian textile producers calling for nearly \$500,000 worth of spinning machinery. Roberts will supply Cosmos Imperial Mills, Ltd., with 55 spinning frames with a total of 13,248 spindles, and other equipment. Roberts will also install 20 frames with a total of 5,040 spindles and other equipment at the Welland, Ont., mill of Dominion Fabrics, Ltd.

Seventy members, who attended the first meeting of the recently-organized Roberts Management Club, were addressed by Dr. Wendell M. Patton, assistant general manager of Shuford Mills, Hickory, N. C. Principal purpose of the club is to establish a Supervisory and executive training program.

## Vinyl Coated Nylon Tarps

Consolidated Edison Co. of New York, is now placing heavy emphasis on protective coverings made of vinylcoated nylon tarpaulins for its field installations. Twenty-five such tarps were placed in service 18 months ago, according to Du Pont. They stood up so well that Consolidated Edison has ordered almost 1,000 more nylon tarpaulins.



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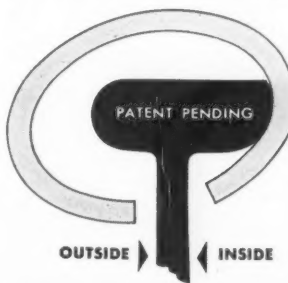
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Permits MAXIMUM advantage from elliptical travelers



- TOP IS FLAT.
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**Results:** Prevents wedging or trapping of yarn. Travelers run cooler, in accurately controlled orbit.

**Thereby:** for the first time, permits elliptical travelers to be used to MAXIMUM advantage.

**Request Literature and Prices**

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For Ala., Ga., & Tenn.: P. C. EVERETT, 359 Meadowbrook Dr. NE, Atlanta

## Metlon Corp.

Effective June 17, 1957

### Metlon-Mylar Price List Metlon F. Mylar (Foil Laminated) Filament

Width	Yards Per Lb.	Price Per Lb. Gold & Silver
1/120"	32,500	\$0.80
1/80"	20,500	8.10
1/64"	17,000	5.95
1/50"	12,750	5.80
1/32"	8,500	5.65
1/16"	4,250	5.65
1/8"	2,125	5.65

Colors Also Available.  
Supplied in staple lengths 1" to 4".  
Prices on unlisted items can be obtained upon request.  
Quantity discounts available.  
TERMS: 1% 10 days, net 30. F.O.B. Providence, Rhode Island.  
Minimum freight allowed on shipments of 100 lbs. or over.  
PUT UP: Plastic Disposable Spools.  
Minimum order—one case (approximately 35 lbs. net). Smaller quantities subject to surcharge.  
PRICES APPLY TO CONTINENTAL U. S. A. AND CANADA.

## Reynolds Metals Co.

### Reynolds Aluminum Yarns

July 5, 1957

200 Series

#### PRICE PER POUND— 48 THRU 1,999 POUNDS

	PRODUCT NUMBER	WIDTH	APPROX. YIELDS IN LINEAL YDS. PER LB.	(1) Standard Colors	(2) Special Colors	(3) Non-Standard and Colors	(4) Multi- Colors
Acetate-Butyrate	204	1/8"	1,350	\$2.80	\$2.90	\$3.05	\$2.95
	204	1/16"	2,700	2.85	2.95	3.10	3.00
	204	1/32"	5,400	3.00	3.10	3.25	3.15
	204	1/50"	8,450	3.25	3.35	3.50	3.40
	204	1/64"	10,800	3.35	3.45	3.60	3.50
Mylar-Foil	204	1/80"	13,500	3.40	4.10	4.25	4.15
	230	1/8"	1,450	\$5.60	\$5.70	\$5.85	\$5.75
	230	1/16"	2,900	5.75	5.85	6.00	5.90
	230	1/32"	5,800	5.90	6.00	6.15	6.05
	230	1/50"	9,050	6.05	6.15	6.30	6.20
Mylar-Foil	230	1/64"	11,600	6.20	6.30	6.45	6.35
	230	1/80"	14,450	7.25	7.35	7.50	7.40
	235	1/8"	2,150	\$5.35	\$5.45	\$5.60	\$5.50
	235	1/16"	4,300	5.50	5.60	5.75	5.65
	235	1/32"	8,600	5.65	5.75	5.90	5.80
Mylar-Foil	235	1/50"	13,400	5.80	5.90	6.05	5.95
	235	1/64"	17,200	5.95	6.05	6.20	6.10
	235	1/80"	21,450	7.00	7.10	7.25	7.15
	215	1/8"	1,730	\$5.30	\$5.40	\$5.55	\$5.45
	215	1/16"	3,460	5.45	5.55	5.70	5.60
	215	1/32"	6,920	5.60	5.70	5.85	5.75
	215	1/50"	10,800	5.75	5.85	6.00	5.90
	215	1/64"	13,840	5.90	6.00	6.15	6.05
	215	1/80"	17,270	6.95	7.05	7.20	7.10

Reymet Staple: Foil Mylar \$6.00 per lb.  
Metallized Mylar: \$10.50 per lb. These can be cut in width to 1/220", also full range of Colors.

(1) Standard Yarn Colors: Silver, Gold, and Copper.  
(2) Special Yarn Colors: Refer to Products Supervisor, Special Foil Products located at Richmond, Va.

(3) Non-Standard Yarn Colors: Refer to Products Supervisor, Special Foil Products located at Richmond, Virginia.

(4) Multi-Colors: Limited to one standard color stripe on silver.

Quantity Discounts to be applied on invoice:  
5,000 lbs. and over less 5%.  
2,000 thru 4,999 lbs. less 3%.

Items can be grouped for quantity price provided each is held to a minimum of 250 pounds. No grouping for less than 250 pounds.

Minimum acceptable orders for standard and special colors is 48 pounds per size and color.

Minimum acceptable order for non-standard colors is 150 pounds per size and color.

#### AVAILABLE PACKAGES:

Following types available:

Die-cast aluminum spools with straight flange; 3" O.D., 3 1/4" traverse. Each spool contains approximately 8 ounces of yarn. These spools, billed at \$4.00 each, are returnable for credit in good condition, F.O.B. Reynolds Metals Company, 11th & Byrd Streets, Richmond, Virginia.

No charge returnable plastic spools with 3 1/4" O.D., 4 1/4" traverse. Each spool contains approximately 1 pound of yarn. These spools are returnable for credit @ \$.02 each F.O.B. customer's plant. Subject to inspection and count of seller.

Tin spools with straight flange with 3" O.D., 3 1/4" traverse. Each spool contains approximately 8 ounces of yarn. These spools, billed at \$.10 each, are returnable for credit in good condition, F.O.B. Reynolds Metals Company, 11th & Byrd Streets, Richmond, Virginia.

#### PACKING:

36 spools per corrugated fiber carton, size 18-1/16" x 14-1/16" x 11".

#### ORDERING DATA:

Specify Product, Width, Color and Type of Spool.

## Aluminized Series

PRODUCT NUMBER	WIDTH	APPROX. YIELDS IN LINEAL YARDS PER POUND	PRICE PER POUND 48 THRU 1999 POUNDS
250	1/32"	10,000	\$8.25
250	1/50"	15,650	8.60
250	1/64"	20,000	8.85
250	1/80"	25,000	10.25
255	1/32"	15,500	\$10.40
255	1/50"	24,200	10.75
255	1/64"	31,000	11.00
255	1/80"	38,700	12.40

250 offered in silver and gold.

255 offered in silver only.

Quantity discounts to be applied on invoice:

2,000 lbs. and over less 3%.  
5,000 lbs. and over less 5%.

Sizes can be grouped for quantity price providing each is held to a minimum of 250 lbs.

No grouping for less than 250 lbs. Minimum acceptable order is 48 pounds per item.

#### AVAILABLE PACKAGES:

Following types available:

Die-cast aluminum spools with straight flange, 3" O.D., 3 1/4" traverse. Each spool contains approximately 8 ounces of yarn. These spools, billed at \$.40 each, are returnable for credit in good condition, F.O.B. Reynolds Metals Company, 11th and Byrd Streets, Richmond, Virginia.

No charge returnable plastic spools with 3 1/4" O.D., 4 1/4" traverse. Each spool contains approximately 1 pound of yarn. These spools are returnable for credit @ \$.02 each, F.O.B. customer's plant. Subject to inspection and count of seller.

Tin spools with straight flange with 3" O.D., 3 1/4" traverse. Each spool contains approximately 8 ounces of yarn. These spools, billed at \$.10 each, are returnable for credit in good condition, F.O.B. Reynolds Metals Company, 11th and Byrd Streets, Richmond, Virginia.

#### PACKING:

36 spools per corrugated fiber carton, size 15 1/4" x 14 1/4" x 11".

#### ORDERING DATA:

Specify Product, Color, Width, and Type of Spool.

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## Calendar of Coming Events

- Feb. 4-6—The Society of the Plastics Industry, Inc. Reinforced Plastics Division Conference. Edgewater Beach Hotel, Chicago, Ill.
- Feb. 5—AATT monthly meeting. Hotel Vanderbilt, New York, N. Y.
- Feb. 7-8—American Society for Quality Control, Administrative Applications Division. Carter Hotel, Cleveland, Ohio.
- Feb. 12-14—1958 Cotton Research Clinic. Pinehurst, N. C.
- Mar. 5—AATT monthly meeting. Hotel Vanderbilt, New York, N. Y.
- Mar. 6-7—Textile Quality Control Association spring meeting. Poinsett Hotel, Greenville, S. C.
- Mar. 13-14—Annual AIEE Textile Electrical Conference. Georgia Institute of Technology, Atlanta, Ga.
- Mar. 13-14—Southern Textile Methods and Standards Association. Clemson House, Clemson, S. C.
- Mar. 18-21—A.S.T.M. Committee D-13 spring meeting. Sheraton Park Hotel, Washington, D. C.
- Mar. 20-21—ASME Textile Engineering Conference. North Carolina State College, Raleigh, N. C.
- Mar. 27-29—Division of High-Polymer Physics of American Physical Society meeting. University of Chicago, Chicago, Ill.
- Apr. 2—AATT monthly meeting. Della Robbia Room, Vanderbilt Hotel, New York, N. Y.
- Apr. 10-11—Cotton Merchandising Research Clinic, annual meeting. Austin, Texas.
- Apr. 10-12—American Cotton Manufacturers Institute annual meeting. Hollywood Beach Hotel, Hollywood, Fla.
- Apr. 16-18—Alabama Textile Manufacturers Assoc. annual meeting. Hotel Buena Vista, Biloxi, Miss.
- Apr. 21-22—NAHM annual meeting and Hosiery Industry Conference. Hotel Roanoke, Roanoke, Va.
- Apr. 23—The Textile Institute annual meeting. Nottingham, England.
- Apr. 23-26—Cotton Manufacturers Assoc. of Georgia. Boca-Raton Hotel, Boca Raton, Fla.
- Apr. 24-26—Phi Psi Textile Fraternity annual convention. Philadelphia, Pa.
- Apr. 29-30—Institute of Textile Technology, Charlottesville, Va. Meetings of Technical Advisory Committee and Board of Trustees.
- Apr. 30-May 1—The Fiber Society spring meeting. Clemson House, Clemson, S. C.
- May 1—Underwear Institute annual meeting. Hotel Biltmore, New York, N. Y.
- May 2—The Drysalts Club of New England spring dinner. Hotel Vendome, Boston, Mass.
- May 3—The Alabama Textile Operating Executives spring meeting. Thach Auditorium, Auburn, Ala.
- May 6—Canadian Textile Conference. Queen Elizabeth Hotel, Montreal, Que.
- May 7—AATT monthly meeting. Della Robbia Room, Vanderbilt Hotel, New York, N. Y.
- May 19-24—National Cotton Week.
- Jun. 4—AATT monthly meeting. Della Robbia Room, Hotel Vanderbilt, New York, N. Y.
- Jun. 4-7—Tufted Textile Manufacturers Association annual meeting. Daytona Beach, Fla.
- Jun. 9-12—Materials Handling Exposition. Public Auditorium, Cleveland, Ohio.
- Jun. 19-21—Southern Textile Association annual convention. Grove Park Inn, Asheville, N. C.
- Jun. 22-27—ASTM annual meeting. Hotel Statler, Boston, Mass.
- Jul. 20-23—Textile Merchants and Associated Industries Exhibit. Sheraton-Jefferson Hotel, St. Louis, Mo.
- Sep. 9-10—The Fiber Society, Inc. Montreal, Can. (Meeting place to be announced.)
- Sep. 11-12—Combod Yarn Spinners Association annual meeting. The Cloister, Sea Island, Ga.
- Sep. 25-26—Northern Textile Association. Wentworth-by-the-Sea, Portsmouth, N. H.

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Bleaching tanks . . . Adaptors . . . Ductwork . . .**

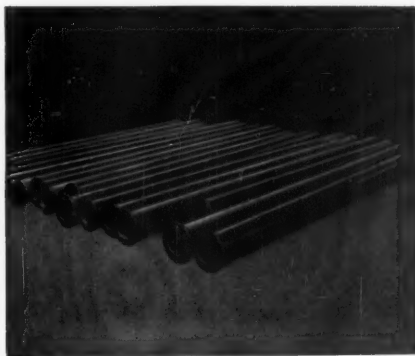
## HERESITE Provides

**Protection of Metal Machine Parts**

**Production Free from Contamination**



HERESITE coated fans and blowers safely exhaust any concentration of acid fumes. The coating resists conditions that would attack even special alloy metals.



Valves, pipe lines, pumps, spools, etc. require HERESITE protection for long trouble-free service.



Solutions stored in HERESITE lined tanks are maintained free from contamination and cannot discolor the spinning bath solution.

## HERESITE & CHEMICAL COMPANY

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in the **right material** for **your job!**

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**TEST SAMPLES ON REQUEST.**

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